University of Alberta

Providing Access to Uncensored Competitor Information: Attribution- and Information-Based Determinants of Consumer Preference

by

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Dedication

This dissertation is dedicated to my family, John, Andrew and Aiden, who are my constant source of support and encouragement and to my mother, who taught me the value of knowledge and education in my life.

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Chapter 1: Introduction

Imagine that you arrive at a new restaurant and find the menu posted in the front entrance. This scenario represents one manner in which firms can relay information to potential customers. Now suppose that in addition to its own menu, the restaurant has posted the menus of several other restaurants in your area. How would this action on the part of the restaurant influence your preferences? What are the factors that may change how your preferences are formed in this situation? In this dissertation, I address those questions by exploring the conditions under which providing access to competitor information in uncensored form may be beneficial to a firm.

The impact of comparative information on consumer preference has been studied in the context of two main streams of research. First, the persuasive communications literature provides insights into the impact of comparative information by examining the effectiveness of comparative advertising formats (e.g., Belch 1981; Grewal et al. 1997; Pechman and Ratneshwar 1991; Pechman and Stewart 1990) and two-sided messages (e.g., Crowley and Hoyer 1994; Hovland, Janis and Kelley 1953; Smith and Hunt 1978; Swinyard 1981). Second, the information display formats literature examines how evaluation mode influences the construction of consumer preferences (e.g., Hsee 1996; Hsee et al. 1999; Russo 1977; Russo and Leclerc 1991). More recently, consumers' response to comparative information formats in online shopping environments has also been examined (e.g., Häubl and Trifts 2000; Lynch and Ariely 2000).

While previous research has focused on the informational aspect of comparisons (i.e., its form and content) and its effects on preference, I propose that in addition to the

information-based effects, the ***act*** of providing access to competitor information (i.e., the attribution-based effects) is another aspect that may have a significant impact on consumer preference. In this dissertation, I test a model in which the effects of the provision of access to competitor information on consumer preference are hypothesized to be mediated by (1) the level of consumers' perceived trustworthiness of the firm providing such access and (2) the amount of consumers' independent search for information. I adopt a signaling framework (Spence 1974), which also incorporates attribution theory (Jones and Davis 1965; Kelly 1973) as a basis for predicting how consumers interpret and respond to the firm that provides access to competitor information. I also identify key contextual factors that are likely to moderate these effects. Finally, I propose that the magnitude of these effects increases over time as consumers learn from experience (Hoch and Deighton 1989).

The motivation for this research stems from a need to address the theoretical issues of the effects created by a firm's deliberate act of exposing itself to comparison by providing consumers with access to *uncensored* information about its competitors. The effect of this dynamic type of comparative information is an area of research that has not been examined within the general framework of persuasive communications. Thus, the framework imposed by models of persuasive communication (e.g., comparative advertising), in which the information content is controlled by the sender, can be considered as a special case of a more general framework of the effects of providing comparative information that applies to the presentation of both censored and uncensored communication. Furthermore, models of persuasive communications have focused predominantly on short-term effects and do not adequately address the issue of how

consumers respond to the provision of access to competitor information as they gain knowledge through experience. Wernerfelt (1996) suggests that helping consumers better assess whether a product is a good choice for them (i.e., facilitating learning) may be a profitable strategy for firms to follow in the long run. The rationale for this argument focuses on the short-term consequences of persuasive communication attempts by suggesting that "a customer, once he or she has experienced regret, will be harder to persuade, such that future trades will be ever more costly and eventually lost" (Wernerfelt 1996, pg. 240). Adopting a long-term perspective enables the examination of the potential of experience to change the relative importance of the two aspects, the attribution- and the information-based components, of comparative information in the construction of consumer preferences (Bettman, Luce, and Payne 1998). The constructionist view suggests people do not have well-defined preferences and preferences are highly context dependent, implying that "processing approaches may change as consumers learn more about the problem during the course of making a decision" (Bettman, Luce, and Payne 1998, pg. 188). This suggests that the importance weights consumers attach to the two aspects of comparative information may shift over time as they gain experience with the firm providing such access.

The framework introduced here includes situations in which the firm does not control the specific nature of the comparative information (e.g., providing consumers with an independent third party information source). Compared to a firm-controlled persuasive message, there is a much greater potential for the firm providing access to competitor information (via an independent third party source) to be compared to more attractive alternatives during any given comparison. The proposed framework also

considers the possibility that consumers may form causal attributions related to their perception that the firm is providing this information to help them make better decisions. For example, in non-persuasive communication settings (e.g., self-directed information search), consumers may attribute the underlying motivation of the firm that provides access to competitor information as more altruistic than they would in a purely persuasive context (e.g., mass media advertising).

The proposed model can be applied to any context – not merely persuasive advertising – that involves the communication of information about product or service offerings between a firm and its customers, including, for example, self-directed consumer information search. It is most applicable in situations involving some degree of risk to the consumer (e.g., moderate- to high-involvement purchase decisions, products with experience properties, or products with a service component). Developments in information technology have greatly increased the capability of firms to provide direct access to uncensored information in a systematic and interactive fashion, thus enhancing the importance of this research issue. While this research is not limited to e-commerce, the proposed framework does have many possible applications in electronic environments, given the dynamic nature of information exchange in such settings.

In fact, several online retailers now provide consumers with access to competitor information within their own digital storefronts. Two notable examples are Progressive Insurance (www.progressive.com) and General Motors (www.gm.com). Progressive Insurance allows its visitors to compare insurance quotes obtained from its website with up to three of Progressive's largest competitors. Similarly, General Motors allows website visitors to compare its automobiles with those of its competitors by providing

direct access to an independent online automotive buyer's guide, "Automotive Information Center." Customers can select competitors and compare vehicle attributes (including suggested retail prices) without leaving the General Motors website. While the number of firms providing such comparisons is still relatively small, it is anticipated to rise as readily available consumer information sources are increasing in both electronic and traditional information environments. Firms that provide direct access to competitor information have the potential to build consumer trust and, at the same time, assist consumers in managing vast amounts of product information.

I begin in the next chapter with a literature review, then provide an overview of the conceptual model and present the formal research hypotheses. In Chapter 3, I report the results of two studies that examine the basic effect of providing information about competitors' *prices* for two search goods (textbooks and jackets) on consumers' long-term preference for a retailer. In Chapter 4, I discuss two experiments designed to test the effects of providing access to competitor information about price and quality attributes for an experience good (vacation packages) on both individual purchases and long-term firm preference. The moderating effects of the objective market position of the firm and the level of decision ambiguity are also examined in these studies. The relationship between the provision of access to competitor information and the cost of independent search, including the effects on both consumer information search and preference, is discussed in Chapter 5. Finally, the contribution of this research to existing theories and directions for future research are identified in Chapter 6.

This dissertation highlights significant findings related to the effects of providing access to competitor information on consumer preference. First, results of the five studies

suggest that the provision of access to competitor information enhances consumer preference for the firm providing such access. Furthermore, this positive effect is mediated by the consumers' level of perceived trustworthiness of the firm, as well as the amount of independent search in which consumers engage. The strongest positive effect is found to occur somewhere between an extremely unfavorable and favorable market position, and under conditions in which decision ambiguity and the cost of independent search are high rather than low.

Chapter 2: A Conceptual Model of the Effects of Providing Access to Competitor Information on Consumer Preference

In this chapter, I develop a comprehensive model of how the provision of access to competitor information by a firm influences consumers' preference for that firm. In the first section, I review previous literature that has examined the effects of comparative information formats on consumer decision making. Next, I propose an alternative theoretical framework from which to study the effects of providing access to competitor information. In the latter portion of this chapter, I describe the conceptual model and develop a set of formal hypotheses.

2.1: The Effects of Comparative Product Information on Consumer Preference

The effects of comparative product information on consumer preference have been studied in the context of two main streams of research. First, the persuasive communications literature provides insights into the effects of comparative product information by examining the effectiveness of comparative and/or two-sided advertising formats. Second, literature on information displays and preference reversals looks at how evaluation mode influences the construction of consumer preferences.

Persuasive Communication

Early research conducted during World War II examined the effectiveness of one- versus two-sided communications in changing opinions on a controversial subject related to the U.S. war effort in the Pacific. While no overall differences in message effectiveness across the two types were detected, two notable findings emerged from this research. First, two-sided messages were more effective for subjects with a higher

education (i.e., high school graduates), and one-sided messages were more effective for subjects with less education. Second, one-sided communication was favored by those who initially favored the position advocated in the persuasive message, while two-sided communication was more effective for those initially opposed to the position advocated in the message (Hovland, Lumsdaine, and Sheffield 1949). These findings concluded that "obtaining information about the educational level and initial position of an audience might be of considerable value in choosing the most effective type of presentation" (Hovland, Janis and Kelley 1953, p. 108). These findings suggest that the effectiveness of providing access to competitor information may be contingent upon such individual difference factors such as subjects' education level, product category familiarity and brand loyalty. Specifically, the provision of access to competitor information may be more effective for well-educated consumers who possess limited knowledge about the firm providing such access. While this heterogeneity may influence the effectiveness of the provision of access to comparative information, the focus of this dissertation is to first establish the basic effects of this construct and its potential moderators. Some aspects of consumer heterogeneity were controlled in the research relative to this dissertation. For example, all subjects participating in the studies have similar educational backgrounds (second and third year commerce students), and all retailers described in the studies are disguised to eliminate any effects of prior knowledge about the firm.

Related research also found that two-sided messages were more accepted than one-sided messages when subjects were exposed to counterarguments (Lumsdaine and Janis 1953; Hass and Linder 1972). Given the vast amount of product information available from multiple sources, consumers are often faced with conflicting information.

Therefore, a firm may realize substantial strategic benefits of providing *uncensored* comparative information about its competitors in an information-intensive environment.

After these initial studies in persuasive communications, some time passed before these findings were revisited in the context of comparative advertising. It was in 1971, at the time when the U.S. Federal Trade Commission began encouraging the use of comparative claims in mass media advertising, that interest in studying the effectiveness of comparative versus noncomparative advertising was rekindled. A comparative ad is defined as an ad that compares an *advertised* brand to at least one *comparison* brand in the same product or service class on specific product/service attributes or market position (Grewal et al. 1997). These comparisons can be either indirect (i.e., ads which describe the advertised brand as being superior to *unnamed* comparison brands) or direct (i.e., ads which describe the advertised brand as being superior to *named* comparison brands), and must contain unique selling propositions or brand differentiating messages (Pechman and Stewart 1990).

Comparative advertising effectiveness has typically been studied within the framework of Lavidge and Steiner's (1961) advertising functions model, which separates advertising objectives into cognitive, affective and conative functions. Using this model, Wilkie and Farris (1975) proposed that comparative advertising should be more effective than noncomparative advertising in generating increased attention and recall, increased comprehension of claims, and greater yielding to claims. However, much of the early empirical research failed to support this proposition (e.g., Belch 1981; Goodwin and Etgar 1980; Swinyard 1981).

Despite these early findings, more recent studies support the idea that comparative advertising offers unique advantages over noncomparative ad claims, especially for low market share (or unfamiliar) advertised brands. For example, Pechman and Stewart (1990) suggested that the null or negative effects previously found in research on the effectiveness of comparative advertising might have resulted from the artificiality of the experimental environments used. Under conditions of non-forced exposure and 24-hour delay in assessing memory and purchase intentions, they found that direct comparative ads attracted more attention and enhanced purchase intentions for low share brands. Subsequently, Pechman and Ratneshwar (1991) found that direct comparative ads, for unfamiliar brands, enhanced consumers' perceptions of the advertised brand by associating it with the comparison brand and *simultaneously* differentiated the brands by lowering consumers' perception of the comparison brand on the featured attribute. Since characteristics of the advertised brand have been found to influence the effectiveness of comparative advertising formats, the provision of access to competitor information may be more beneficial to firms that are not already perceived as market leaders. This is also consistent with findings from the persuasive communications literature (see e.g., Hovland, Janis, and Kelley 1953).

Another factor thought to contribute to the lack of support for Wilkie and Farris' (1975) propositions is the limited ability of absolute scales to assess the persuasive impact of comparative ads. Relative measures (i.e., measures that use the comparison brand as a point of reference in their assessment) were found to be (1) better able to detect substantial differences in persuasion between comparative and noncomparative ads and (2) consistently more predictive of subjects' choices than absolute measures (Miniard

et al. 1993; Rose et al. 1993). Recent work explores the mental representations created by comparative advertising and suggests that differentiative comparative ads generate disassociative rather than associative mental impressions. Therefore, both relative and nonrelative impressions may be formed following exposure to comparative ads (Manning et al. 2001). Related to my model, these findings suggest that the specific nature of the task in which consumers are engaging may play an important role in determining the effectiveness of providing access to uncensored information about competitor offerings. For example, the provision of such access may be most beneficial to consumers when they are evaluating alternatives prior to making a choice.

Another important aspect of comparative ads relates to the specific content of the information provided in the comparison. While Grewal et al. (1997) concluded, in their meta-analysis, that a comparative ad may evoke lower source believability and a less favorable attitude towards the ad, two specific types of comparative ads seemingly overcome these problems. The piecemeal approach – where the sponsor brand is compared to one competitor on a particular dimension, a second competitor on a different dimension, and so on – was found to be persuasive in situations that do not provoke deep skepticism because piecemeal comparative ads make seemingly strong claims in a believable manner (Muthukrishnan, Warlop, and Alba 2001). The partial comparative ad – an advertisement containing a mixture of comparative and noncomparative claims regarding the product's performance – was shown to result in a priming effect such that a positive initial comparison on the first attribute presented led consumers to infer that the target brand was also superior on a second, non-compared attribute. These results suggest

a persistent and deceptive belief that affected subjects' attitudes, intentions and choices (Barone and Miniard 1999).

These types of comparative ads highlight a major limitation of the persuasive communication literature related to the potential for deceptive practices to occur when the content of the message is controlled by the sender. In my framework, I argue that it is this potential for deception when the advertiser maintains control over the content of the comparative information that limits the applicability of the persuasive communication model. In my model, the relinquishing of control over the specific content of the comparative information is considered to be the primary driver of trust formation and long term firm preference.

Another aspect of the persuasive communication literature relevant to the study of comparative information formats is that of message sidedness. Message sidedness has typically been studied within the framework of attribution theory, which describes the process an individual goes through in assigning causes to events (Jones and Davis 1965; Kelley 1973). The assumption is that the audience might attribute the motivation for the advertising claim to the advertiser's *disposition* or to the advertising *situation* (Swinyard 1981). While consistent findings support the theory that two-sided message claims evoke greater overall believability than one-sided claims (Smith and Hunt 1978; Swinyard 1981), empirical results of its effects on purchase intentions and behavior are inconsistent. Results were either non-significant or mixed (Belch 1981; Kamins and Marks 1987; Swinyard 1981), or favored the two-sided persuasion (Etgar and Goodwin 1982; Golden and Alpert 1987; Grewal et al. 1997).

One explanation for such inconsistent findings from the message sidedness literature is that these mixed results reflect a *tradeoff* created by two-sided advertising, between the ad being novel, involving, credible and affectively pleasing, and the ad communicating negative product information (Crowley and Hoyer 1994). Therefore, in order for two-sided advertising to have a positive impact on purchase behavior, the advantages of this format must outweigh the potential negative product beliefs that may be created. That is, in the context of comparative advertising, the "enhancement of credibility" associated with the inclusion of a two-sided claim must be relatively strong, compared to the impact of the inclusion of negative product information, in order to affect purchase behavior (Grewal et al. 1997). This implies that firms occupying an unfavorable market position would not benefit from providing access to comparative information because the negative product information would outweigh any enhancements to credibility. Relating this factor to the finding that comparative advertising formats are less effective for market leaders suggests that the provision of access to competitor information may be most beneficial to a firm moderately positioned in the marketplace.

A more general explanation for the inconsistencies in the persuasive communications literature comes from Friestad and Wright's (1994) Persuasion Knowledge Model (PKM). The PKM suggests that consumers are able to use their persuasion knowledge to identify that an agent is attempting to influence them and trying to manage the persuasion episode to achieve its own goals. Building on the PKM, Meyers-Levy and Malaviya (1999) proposed an integrative model of advertising persuasion which outlines three alternative strategies people use to process persuasive communications and form judgments. They argue that persuasion does not rest within an

advertising message per se, but rather depends on the particular mental processes that an ad recipient invokes.

Empirical tests of the PKM have resulted in some interesting findings. In the context of interpersonal settings (e.g., encounters with salespersons), Campbell and Kirmani (2000) found that when a salesperson's behavior did not make the underlying persuasion motives accessible, consumers whose cognitive capacity was constrained by competing cognitive demands relied less on persuasion knowledge and perceived the salesperson as more sincere. The results from Campbell and Kirmani (2000) suggest a firm willing to provide access to competitor information, in a non-persuasive communication setting, may be perceived as more sincere because consumers cannot easily access a firm's underlying persuasion motives. This highlights another major limitation of the persuasive communications literature for studying the effects of comparative information in that it only applies in the context of explicit persuasive communications. My model provides a much more general approach to the study of comparative information in that it is not restricted to overt persuasion attempts, but rather can be applied to any form of communication between a firm and its customers, including, for example, consumers' self-directed information search. Another limitation of the persuasive communication literature relates to its focus on short-term effects (e.g., attitude towards the ad or brand; purchase intentions). In my model, I test the impact of providing access to competitor information on subsequent consumer search behavior to examine the impact on consumers' preference for the firm over repeated interactions. In several experiments, the effects of providing access to competitor information are tested

on measures of both short-term individual purchases as well as long-term overall firm preference.

Information Display Format

The findings of numerous studies suggest that the way in which information is displayed influences decision processes by affecting the ease of carrying out different processing operations (see Kleinmuntz and Schkade 1993). A classic study by Russo (1977) showed that supermarket shoppers who were given organized lists of unit price information used this information more readily than the standard shelf-price information that made comparisons more difficult. Subsequently, Russo and Leclerc (1991) found that these types of ordered lists reduced the required level of cognitive effort of a decision maker, leading to the use of more accurate decision strategies.

When a firm provides access to competitor information, consumers are more readily able to shift from memory-based to stimulus-based decision making, thereby reducing the probability of choosing an inferior alternative (Muthukrishnan 1995). In the context of online shopping, Häubl and Trifts (2000) found that allowing consumers to compare alternatives in an alternatives-by-attributes matrix improved the quality of consumers' decisions. Taken together, these findings suggest that providing access to competitor information provides additional benefits to consumers – over and above those that influence the level of perceived trustworthiness of the firm – by enabling them to improve the accuracy of their decisions. However, in complex decisions, consumers are likely to have multiple goals (Bettman, Luce and Payne 1998) such that they would consider both assortment (e.g., products available) and non-assortment (e.g., trustworthiness) characteristics when choosing the firm with whom they will execute a

transaction. In other words, when there is a significant degree of risk associated with a purchase, the product itself is less likely to be the sole determinant of where consumers purchase the product.

Rational choice theory suggests people have well defined preferences that do not depend on the manner in which they are elicited; however, recent theory has proposed that preferences are often constructed at the time the respondent is asked to indicate a judgment or make a choice among options (Slovic 1995). The constructionist view suggests that preferences are highly context dependent and can be influenced by such factors as the framing of the problem (e.g., Levin and Gaeth 1988), the format of the information (e.g., Häubl and Murray 2003; Johnson, Payne and Bettman 1988; Russo 1977), the consumer's product-category familiarity (Coupey, Irwin and Payne 1998), and the addition of a dominated alternative to a choice set (Huber, Payne and Puto 1982; Simonson 1989).

The principle of procedure invariance, a key tenet of rational choice theory, has been shown not to hold in many contextual settings when different response modes (i.e., choice versus evaluation) are used (Mowen and Gentry 1980; Tversky, Slovic and Kahneman 1990; Slovic and Lichtenstein 1983). Nowlis and Simonson (1997) provide evidence to suggest that some response modes, such as choice, evoke qualitative reasoning while other response modes, such as evaluation, evoke more quantitative reasoning. This factor has been used to explain preference reversals resulting from different evaluation modes.

Building on the findings related to how response mode can lead to preference reversals (see e.g., Johnson et al. 1988), Hsee and colleagues proposed that, independent

of the scale used to elicit responses, preference reversals could also occur between (a) situations in which multiple options are presented simultaneously and can be compared easily (i.e., joint evaluation mode – JE) and (b) situations in which alternatives are presented one at a time and evaluated in isolation (i.e., separate evaluation mode – SE) (Hsee 1996; Hsee et al. 1999). The evaluability hypothesis posits that it is more difficult to evaluate the desirability of the levels of some attributes than those of others and that, compared with easy-to-evaluate attributes, difficult-to-evaluate attributes have a greater impact in JE than in SE. I argue that assortment characteristics, which are provided in the form of product descriptions, are easier to evaluate than non-assortment characteristics (e.g., trustworthiness) of the firm. Therefore, consumers may place a greater emphasis on these non-assortment characteristics when access to competitor information is provided. This is especially significant for those firms not occupying a superior market position. This notion is consistent with recent empirical work in which attractive alternatives were perceived as more attractive when presented alone (i.e., separate evaluation mode) than jointly, and unattractive alternatives were perceived as more attractive when presented together (i.e., joint evaluation mode) than separately (Hsee and Leclerc 1998). Gonzalez-Vallejo and Moran (2001) extended this work by showing that, in addition to attribute evaluability, attribute importance also plays a significant role in JE-SE preference reversals. I argue that in risky decisions, non-assortment features such as the level of perceived trustworthiness of the firm may become more important than the assortment characteristics, and thus may be given more attention, when firms are evaluated jointly as opposed to separately.

While research in the area of information display and preference reversals related to simultaneous versus independent evaluation modes allow one to draw inferences as to the nature of the information-based effects of providing access to competitor information, it does not address the issue of how consumers interpret the rationale behind *why* a firm would provide consumers with competitor information. Research has also been limited to the immediate – rather than the longer-term – effects of format on decision making. In the next section, I outline an alternative framework for studying the effects of comparative information that incorporates both the attribution- and the information-based components of providing access to competitor information, and that applies to both short- and long-term effects.

2.2: A General Framework for Studying the Effects of Comparative Information on Consumer Preference

While previous research provides some insights into how consumers respond to comparative information, it does not explicitly separate the influences of the "informational" and the "action" components of providing access to competitor information on consumer preference. In the proposed model, I argue that consumer preferences are shaped by both the additional information revealed in the comparisons, and by the consumers' perceptions of why a firm would provide such information. Signaling theory provides a solid foundation from which to build a model of the effects of providing access to competitor information. In this section, I review the recent work on signaling and the formation of trust.

Signaling

Signaling theory emerged from the study of the economics of information, particularly in situations where different parties in a transaction have different levels of information relevant to the transaction (Spence 1974). Porter (1980) conceptualized a signal as the actions and/or announcements of a firm that convey information about its intentions and abilities. Signaling has been used to explain important aspects of a firm's relationships with its customers (e.g., Boulding and Kirmani 1993; Kirmani and Rao 2000), its competitors (e.g., Moore 1992; Prabhu and Stewart 2001) and members of its distribution channel (e.g., Anderson and Weitz 1992). In this research, I apply signaling theory to the relationship between a firm and its (prospective) customers. In particular, I examine the potential signaling effect of a firm's provision of access to competitor information on consumers' perceived trustworthiness of, and preference for, the firm.

Signaling has been used as a way to resolve the problem of adverse selection, which occurs when low quality firms falsely claim to be of high quality (Eisenhardt 1989; Mishra, Heide and Cort 1998). Recent work has examined how signals are used to communicate the unobservable quality of a product (e.g., Boulding and Kirmani 1993; Kirmani and Rao 2000). This occurs when the true quality of the product is unknown to the buyer until after it is purchased, as in the case with products high in experience properties. In this research, I extend this theory to the situation in which *characteristics of the firm* (as opposed to the product) are unobservable prior to completion of a purchase transaction and, in fact, may be difficult to observe even across multiple transactions. Arguably, consumers entering into a long-term (or otherwise risky) relationship with a firm will not only consider characteristics of the product assortment, but also non-

assortment characteristics of the firm. In my model, perceived trustworthiness of the firm is a key non-assortment characteristic that influences consumers' preference for that firm.

In a recent review of signaling theory, Kirmani and Rao (2000) proposed a typology of signals based on the nature of the monetary loss incurred by the firm as a result of signaling. Sale-independent default-independent signals are those actions that are taken regardless of whether anyone buys the product, and that require an initial expenditure or commitment on the part of the firm. Examples of this type of signal include investments in advertising and brand name, as well as any other investments in reputation (Kirmani and Rao 2000, pg. 69). The provision of access to competitor information can be conceptualized as a way in which a firm can invest in building its reputation, and an action that requires a substantial initial commitment on the part of the firm. That is, by providing access to competitor information, the firm incurs the risk of losing potential customers to its more attractive competitors. This risk is likely to be perceived by consumers as a real cost incurred by the firm and therefore, is likely to be perceived as an action that conveys important information about the quality of that firm (i.e., a signal). I propose that such a signal will have a positive effect on consumers' perceived trustworthiness of, and preference for, the firm providing access.

In the context of interactive environments, Kulkarni (2000) proposed that advances in information technology that significantly reduce search costs for consumers will lead to a noticeable reduction in short-term informational rents for firms competing in online shopping environments. He further argues that, because information technology reduces the information asymmetry between buyers and sellers, firms are less able to act opportunistically. As opportunism has been viewed as the opposite of trust, a reduction in

opportunistic behavior by a seller will build trust and reputation in the long run (Kulkarni 2000, pg. 64). By providing access to competitor information, a firm actively contributes to the reduction of information asymmetry. Because the resulting benefits to consumers should be attributed to the actions taken by the firm (and not, for example, some third party information source), this should lead to an increase in the perceived trustworthiness of the firm providing access to competitor information. In the context of commercial transactions, trust has been defined as "the mutual confidence that no party to an exchange will exploit its informational advantage" (Sabel 1993, pg. 1133). Not only does a firm that provides access to competitor information *not* exploit its informational advantage, but it actually relinquishes some of this advantage by providing valuable competitor information to consumers that they otherwise would be unlikely to have and that would require a substantial amount of effort to obtain from the original sources. As opportunism has been described as the opposite of trust (Kulkarni 2000), I conceptualize the act of providing access to competitor information as a signal of the unobservable trustworthiness of the firm. In the next section, I will review the relevant findings of theories of trust from a multidisciplinary perspective.

Trust

The concept of trust has many aspects that draw from the fields of philosophy (Barber 1983), social psychology (Couch and Jones 1997; Rotter 1980), sociology (Lewis and Weigert 1985; Zucker 1986), economics (Williamson 1993), and organizational behavior (Hosmer 1995; Mayer, Davis and Schoorman 1995; McAllister 1995; McKnight, Cummings and Chervany 1998). In marketing, the development and subsequent effects of trust have been studied in the context of consumer-service provider

relationships (Sirdeshmukh, Singh, and Sabol 2002), market research provider-user relationships (Moorman, Deshpandé, and Zaltman 1993; Moorman, Zaltman, and Deshpandé 1992), selling partner relationships (Smith and Barclay 1997), industrial buying (Doney and Cannon 1997), channel relationships (Andaleeb 1996), and relationship marketing (Morgan and Hunt 1994).

Despite the attention given to studying trust across disciplines, defining the exact nature of trust has been hampered due to the contextual nature of the construct (Hwang and Burgers 1997). In addition to the definition identified in the previous section (i.e., Sabel 1993), numerous other conceptualizations of trust have been proposed. For example, Rotter (1980, pg. 1) defines trust as "a generalized expectancy held by an individual that the word, promise, oral or written statement of another individual or group can be relied upon." Zucker (1986, pg. 54) proposed that trust is "a set of expectations shared by all those involved in an exchange." In marketing, trust has been identified as one of the central constructs in relationship marketing theory (e.g., Morgan and Hunt 1994), and has been defined as a willingness to rely on an exchange partner in whom one has confidence (Moorman, Zaltman, and Deshpandé 1992). Alternatively, trust has been defined as the perceived credibility and benevolence of a target of trust (Doney and Cannon 1997). Currall and Judge (1995) define trust as an individual's behavioral reliance on another person under a condition of risk. Trust is also defined as the willingness of a party to rely on the behaviors of others, especially when these behaviors have outcome implications for the party bestowing the trust (Andaleeb 1996).

Regardless of how trust is operationalized, two functional elements of its definition are comparable across research streams. First, some element of risk is

necessary because risk creates an opportunity to trust. Secondly, trust evolves in the presence of interdependence, where the interests of one party cannot be achieved without reliance upon another (Rousseau et al. 1998). Given these conditions, Rousseau et al. (1998) proposed a definition of trust as "a psychological state comprised of the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another."

Relational-based trust derives from repeated interactions over time, as one gains knowledge through experience with another party. Reliability and dependability in previous interactions with the trustor give rise to positive expectations about the trustee's intentions (Rousseau et al. 1998). One type of past experience that is positively related to the level of trust in subsequent encounters is the degree of communication openness present in the relationship (Anderson and Narus 1990). In cooperative selling alliances, communication openness has been defined as the formal and informal sharing of timely information between the selling partners (Smith and Barclay 1997, pg. 6). It can involve (1) disclosing important yet potentially self-damaging information, (2) being accurate when communicating, and (3) not filtering or distorting information, and is considered to be a significant form of trusting behavior (Curral and Judge 1995). Communication openness has been found to have a direct and positive relationship with the level of trust (Anderson and Narus 1990; Anderson and Weitz 1989; Morgan and Hunt 1994). The definition of communication openness implies a willingness to reduce the uncertainty of the other party, which has also been found to be a significant predictor of trust (Moorman, Deshpandé, and Zaltman 1993). I argue that providing access to competitor

information is a form of communication openness that may impact the perceived trustworthiness of the firm.

In the following sections, I propose a set of formal hypotheses designed to address both the attribution-based and the information-based determinants of the relationship between the provision of access to uncensored competitor information and consumer preference.

2.3: Overview of the Conceptual Model

The conceptual model to be tested in this dissertation is based on the assumption that the information provided by the firm is unbiased and accurate, and that there are no inconsistencies between this information and information that consumers may obtain independently (e.g., by acquiring information directly from each competitor).[1] While this does not imply a precise match, as this will depend on the amount of independent search conducted, it does mean that the two sources will not contradict each other. The *provision of access to competitor information* can be conceptualized as a continuous construct, where the comprehensiveness and the accessibility of the competitor information that a firm makes available can vary. For example, comparisons may be provided on the basis of a single attribute (e.g., price) or on all relevant dimensions, and for a few or all alternatives available in the marketplace. Finally, the model is most applicable in situations involving some degree of risk to the consumer (e.g., moderate- to high-involvement purchase decisions). Under conditions in which there is no risk, consumer

[1] One possible extension of this model would be to include the possibility of comparisons that are biased (e.g., selective in that only non-damaging comparative outcomes are included, or in that comparisons are based on only a subset of the attributes along which firms differ).

preferences are more likely to be formed by other mechanisms (e.g., the firm's market position) defined in the conceptual model.

Rousseau et al. (1998) proposed a definition of trust as "a psychological state comprised of the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another." In this model, *perceived trustworthiness* is a psychological state resulting from the firm's willingness to provide access to competitor information. It relates directly to the consumer's interpretation of the reason why a firm would willingly expose itself to such comparisons, especially when competitors offer more attractive alternatives than the firm providing such access.

The *objective market position* of the firm represents the firm's dominance in the marketplace in terms of its product offerings. I acknowledge that the true position of the firm is specific to each individual and dependent upon the relative importance weights attached to firm attributes. Additionally, an individual's ability to unveil this "true" market position of the firm is contingent upon the information they are able to obtain about other competitors in the marketplace.

The *cost of independent search* can be conceptualized as the opportunity costs and efficiency associated with consumers' search for information about competitors' offerings (Moorthy, Ratchford, and Talukdar 1997). This factor represents how easy or difficult it is for consumers to obtain competitor information from sources external to the firm that provides access to competitor information. The *amount of independent search* represents the amount of effort undertaken by a consumer during the external search process (i.e., in addition to any competitor information that might be given by a firm providing such access). In this dissertation, the amount of independent search is

operationalized as the number of independent information sources used and the percentage of total time engaged in searching for information at these independent sources.

Decision ambiguity is broadly defined as non-comparability among competing options in terms of the amount and type of decision-relevant information available (Muthukrishnan 1995). Prior research has identified several factors as potential sources of decision ambiguity (see e.g., Hoch and Deighton 1989), relating to both product characteristics and characteristics of the decision environment. In my research, I manipulate the level of ambiguity by varying both the degree to which competing products possess comparable attributes and the amount of missing information relevant to the decision process.

Finally, *preference* is a psychological state comprised of an individual's inclination to choose one firm over another based on his or her relative utility for each choice option. In the five experiments of this dissertation, preference is measured by the consumers' stated purchase intentions and choice behaviors.

2.4: The Attribution-Based Effects of Providing Access to Competitor Information

Providing Access to Competitor Information as a Signal of Trustworthiness

Signaling theory (Spence 1974) has been used as a basis for explaining how actions and/or announcements of a firm convey information about its intentions and abilities (Porter 1980). Integrated into the typology of signals proposed by Kirmani and Rao (2000), the act of providing access to competitor information can be considered an investment in building a long-term reputation of trustworthiness. This rationale is

consistent with theories of trust (e.g., Anderson and Narus 1990; Anderson and Weitz 1989; Morgan and Hunt 1994), which identify communication openness as a significant form of trust-building behavior. In addition, by providing access to competitor information, a firm contributes to the reduction in information asymmetry in the market, thereby relinquishing some of the informational advantage it may have relative to potential consumers. This deliberate decision not to act opportunistically by exploiting their informational advantage has the potential to enhance trustworthiness in the long run (Kulkarni 2000; Morgan and Hunt 1994). Therefore, I hypothesize the following:

H_1: Providing access to competitor information enhances the perceived trustworthiness of the firm.

From the seller's standpoint, using a signal leads to a "separating equilibrium" where market incentives make it profitable for the high-quality seller to send the signal and unprofitable for the low-quality seller to do so. From the consumer's perspective, a signal enables him/her to distinguish between "good" and "bad" sellers by looking for signals that are profitable for high-quality sellers to send, but unprofitable for low-quality sellers (Boulding and Kirmani 1993). A firm that is consistently shown to be inferior to its competitors in direct comparisons has no economic incentive to signal. Therefore, consumers should infer that a firm that provides access to uncensored information about its competitors is of high quality (Kirmani and Rao 2000) and, all else being equal, prefer it over a firm that does not provide such access. This is also consistent with findings from the persuasive communication literature, which suggests that comparative advertising formats tend to be more effective that noncomparative formats in generating favorable

brand attitudes and enhancing purchase intentions and behavior (Grewal et al. 1997). Therefore, the following is hypothesized:

H_2: Providing access to competitor information enhances consumer preference for a firm relative to competitors with comparable offerings who do not provide such access.

The level of perceived trustworthiness has been shown to be positively related to consumers' anticipated future interaction with the firm (Doney and Cannon 1997). The effect of the level of trustworthiness is closely tied to issues of source credibility in the context of persuasive communications. Source credibility, originally defined by Hovland, Janis, and Kelly (1953) as trust of the speaker by the listener, has been linked to purchase decision making. Numerous studies have shown that high levels of source credibility enhance persuasion (Harmon and Coney 1982; Heesacker, Petty, and Cacioppo 1983; Sternthal, Dholakia, and Leavitt 1978), increase perceived quality (Gotlieb and Sarel 1992), and heighten purchase intentions (Gotlieb and Sarel 1991). Therefore, I predict the following effect:

H_3: Perceived trustworthiness has a positive effect on consumer preference for the firm.

Taken together, H_1 and H_3 represent the prediction that providing access to uncensored competitor information has an indirect positive effect on consumer preference that is mediated by the perceived trustworthiness of the firm. In the next section, I examine three key contextual factors that are likely to moderate these effects.

Interpretation of and Response to the Signal

Attribution theory (Jones and Davis 1965; Kelly 1973) has been used to explain how contextual cues affect signal interpretation (Prabhu and Stewart 2001). In my model, I propose that (1) the firm's objective market position, and (2) the cost of independent search will each moderate the effects of providing access to competitor information on perceived trustworthiness by affecting the consumer's interpretation of the signal.

The discounting principle (Ross and Anderson 1982) suggests that, if the signal can be adequately explained by external or situational factors, no inference will be made about the disposition of the sender (Jones and Nisbett 1971; Kelley 1973). Conversely, the principle of correspondence inference (Jones and Davis 1965) suggests that when the signal cannot be attributed to an external cause, the receiver infers the existence of some internal disposition of the sender to account for the signal. Applied to the present context, attribution theory suggests that consumers may seek a reason for why a firm would deliberately make itself vulnerable by providing access to potentially self-damaging competitor information. It also suggests that the firm's objective market position may influence consumers' inferences about the firm's motives behind providing such access.

If the firm occupies a very favorable market position relative to its competitors, consumers may perceive the outcome of the comparison as merely a statement of facts on the part of the firm. In this case, external factors – that is, the firm's position in the competitive environment – may be a sufficient explanation of the presence of the signal. In other words, the firm has an economic incentive to provide information that shows their competitive position in the marketplace. However, for a firm that occupies a less favorable market position relative to the competitors, external or situational factors may

not adequately explain the motive for the act of providing access to competitor information. Therefore, consumers may infer that the firm is genuinely interested in assisting the consumer in making the best possible purchase decision. Also, because the comparative information may produce results that are actually damaging to the firm, consumers will be less likely to question the accuracy and uncensoredness of the information provided. However, the range of this effect is anticipated to have a lower bound such that a firm occupying an unfavorable market position, i.e., one that is consistently perceived as worse than its competitors is unlikely to derive significant benefits from providing access to uncensored competitor information. Therefore, the effect of providing access to competitor information is hypothesized to be strongest at some intermediate level of market position. This prediction is consistent with the findings from the literature on two-sided persuasion (e.g., Crowley and Hoyer 1994), which has demonstrated that the inclusion of some negative information in a persuasive message (i.e., two-sided claims) can evoke greater overall believability (Smith and Hunt 1978), and have a stronger positive effect on purchase intentions and behavior than one-sided claims (Etgar and Goodwin 1982; Golden and Alpert 1987; Grewal et al. 1997). The provision of access to competitor information that may yield both favorable and unfavorable product comparisons from the focal firm's point of view is conceptually similar to a two-sided message – albeit one where the firm does not have control over the specific pieces of information that constitute the "message." In sum, the following moderating effect is hypothesized:

H_4: The strongest positive effect of providing access to competitor information on perceived trustworthiness occurs somewhere between an extremely favorable and an extremely unfavorable objective market position of the firm.

A similar prediction can be made concerning the moderating role of independent search costs (e.g., Lynch and Ariely 2000; Moorthy, Ratchford, and Talukdar 1997). That is, consumers are more likely to attribute the signal to internal factors when search costs are high because the firm is willing to provide information that would, otherwise, be costly for consumers to obtain. Conversely, when information search costs are low, consumers will tend to perceive the motivation behind the firm's actions as being caused by the mere nature of the external information environment. Applying attribution theory to signal interpretation suggests that providing access to competitor information should be more effective when independent search costs are high.

H_5: The magnitude of the positive effect of providing access to competitor information on perceived trustworthiness increases as the cost of independent search increases.

Decision ambiguity is also expected to play a key role in determining consumers' responses to the signal of trustworthiness. Several factors may cause such ambiguity and, while providing access to competitor information and engaging in external information search can reduce some forms of ambiguity (e.g., that due to incomplete information), other forms may persist (e.g., that due to noncomparability across alternatives), such that even side-by-side comparisons may not reveal clearly which option is superior in a choice set (Muthukrishnan and Kardes 2001). If product quality is readily discernible, or if consumers are completely informed, signaling may not be an effective strategy (Kirmani and Rao 2000). This implies that, without some form of ambiguity, consumers are more likely to rely on the firm's market position than their perception of the firm's level of trustworthiness when forming an evaluation of the firm. Therefore, the following moderating effect is hypothesized:

H_6: The magnitude of the positive effect of providing access to competitor information on consumer preference increases as the level of decision ambiguity increases.

2.5: The Information-Based Effects of Providing Access to Competitor Information

The cost-benefit framework for studying consumer information search proposes that consumers will expend effort in search as long as the perceived benefits exceed the perceived costs (Punj and Staelin 1983; Srinivasan and Ratchford 1991). Empirical evidence shows that higher cost of information search reduces the amount of search undertaken by consumers (Moorthy, Ratchford, and Talukdar 1997; Punj and Staelin 1983). In the studies to follow, this well-established relationship will be tested merely as a benchmark hypothesis. The amount of search for product information is determined by consumers' uncertainty about (1) the absolute utility associated with an alternative and (2) the relative utility of alternatives in a set (Moorthy, Ratchford and Talukdar 1997; Ratchford and Srinivasan 1993). When a firm provides access to information about its competitors, consumers are better able to reduce both the individual and the relative uncertainty associated with the firm.[2] If the information contained in the comparison is equivalent to that which could be obtained from external sources, then providing such access should reduce the amount of independent search a consumer undertakes. In essence, providing access to competitor information allows consumers to substitute one information source for another. Furthermore, as consumers learn that the comparative information is accurate and diagnostic of the retailer's true market position, they may come to rely on this source more than on external sources.

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[2] This argument is consistent with the concept of individual versus relative brand uncertainty (see Moorthy, Ratchford, and Talukdar 1997), where the "firm" is synonymous with the brand.

H_7: The provision of access to competitor information reduces the amount of consumers' independent search.

While the provision of access to competitor information enables consumers to effectively substitute one internal information source for several independent sources, the degree to which this substitution will take place is contingent upon the cost of searching these independent sources. If information is readily available and easy to obtain from other sources, consumers may derive little benefit from the firm that provides this information directly. In this case, the cost/benefit framework would suggest that consumers may engage in independent search because the potential benefits of additional search may outweigh the additional costs (Moorthy, Ratchford, Talukdar 1997; Ratchford and Srinivasan 1993). However, when the cost of obtaining information from independent sources is high, consumers are likely to derive more benefit from a firm's willingness to provide such comparative information. In this case, the potential costs of independent search may outweigh the potential benefit of searching these sources. Therefore, the magnitude of the effect of the provision of access to competitor information on the amount of independent search should be greater when the cost of independent search is high rather than low.

H_8: The magnitude of the negative effect of providing access to competitor information on the amount of consumers' independent search increases as the cost of independent search increases.

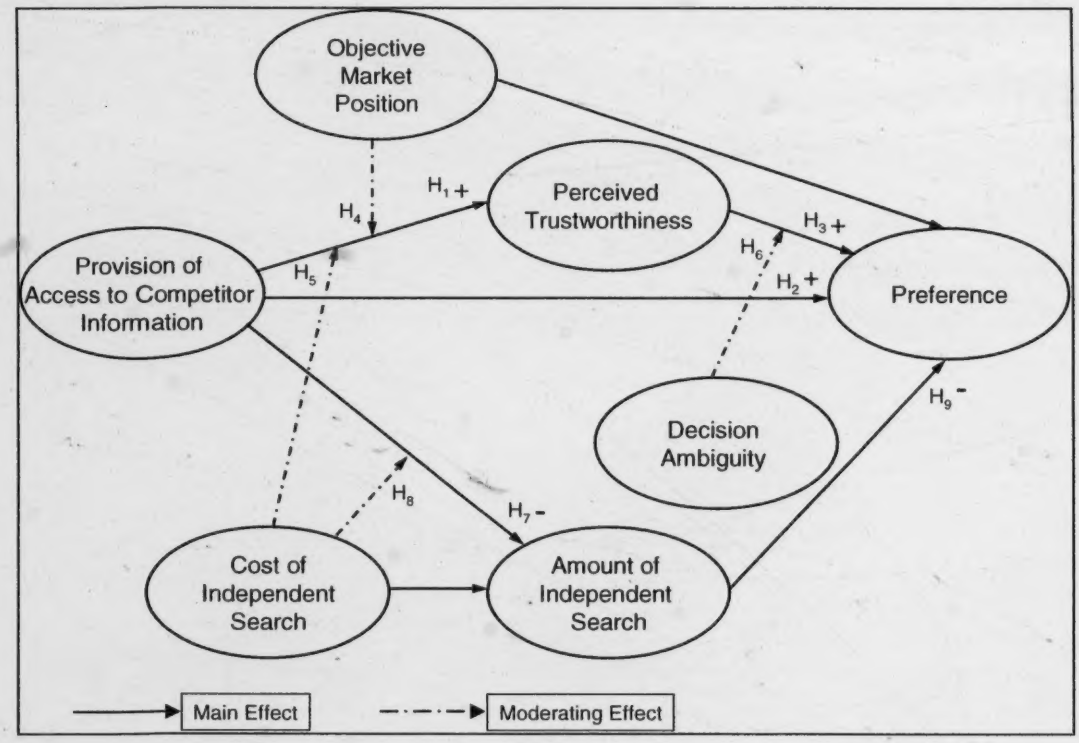
At the extreme high end of the continuum, the comparative information supplied by the firm would completely subsume all information consumers could obtain from independent sources. If this were the case, independent search would be redundant. However, it is unlikely that a firm could, or would, supply all possible information that is

available elsewhere. Therefore, independent search is likely to provide consumers with information not supplied by the firm, and consumers are likely to engage in some independent search if only to confirm the accuracy of the information provided by the firm. Recent evidence from the two-stage theory of choice literature suggests that information search can exert a strong influence on which brands are considered. Wu and Rangaswamy (2002) suggest that consumers who engage in high levels of external information search tend to expand the size of their consideration sets. Searching for information through external sources increases the chance that a consumer will consider more options and, thus, reduces the probability of any given alternative being chosen (Andrews and Srinivasan 1995; Heath and Chatterjee 1995; Luce 1959; Luce and Suppes 1965). Therefore, a higher amount of independent search may reduce the probability that the consumer will prefer the firm providing access.

H_9: The amount of consumers' independent search has a negative effect on preference for the firm.

The conceptual model representing the hypotheses discussed in this chapter is provided in Figure 1. In the next chapter, I discuss findings related to the nature of the basic effects of providing information about competitor prices on consumer preference. Specifically, I report the results of two studies which support the hypothesized effect of the provision of access to competitor information on consumer preference that is mediated by the level of perceived trustworthiness of the firm providing such access.

Figure 1: Conceptual Model



Chapter 3: The Basic Effect of Providing Access to Competitor Price Information on Consumer Preference

In this chapter, I discuss the results of two experiments that examine the relationship between the provision of access to competitor information and the objective market position of the firm. First, I summarize a recently published paper that examines the effect of providing competitor price information on consumers' choice of textbook retailers (Trifts and Häubl 2003). Following this, I provide a brief overview of results from a related experiment conducted to test the same hypotheses, but using a different product category for the experimental stimulus and under conditions of non-forced exposure to external information about competitors' offerings.

3.1: Method – Study 1[3]

This study examines consumers' reactions to the provision of direct access to uncensored competitor price information within an electronic store. Specifically, I examine such effects on the level of perceived trustworthiness of and consumer preference for the online vendor. The results demonstrate that it is possible for a firm to benefit significantly from providing consumers with access to uncensored information about its competitors' product offerings. However, key limitations to these results, which will be discussed at the end of this chapter, indicate a need for further development of this research stream.

This study was conducted in the form of a computer-based laboratory experiment. A pilot study (n = 47) was run to ensure the effectiveness of the experimental

[3] A version of this study has been published. Trifts and Häubl 2003. Journal of Consumer Psychology. 13: 149-159.

manipulations and the functionality of the computer program. Data were collected in groups of approximately 15 individuals, with an administrator being present throughout. A total of 121 university students participated in the study for both partial course credit and a lottery incentive. Subjects were asked to provide their consent to participate by clicking on the hyperlink to enter the experiment (see Appendix A). After logging in to the main experiment page, they were provided with a description of the task (see Appendix B). They were informed that their university was considering a joint venture with one of several online book retailers. Under such an agreement, registered students would receive a substantial discount on their textbook purchases from the adopted vendor. Participants were told that they had been assigned to one of the candidate retailers and that their task was to evaluate it based on a search for a sample of textbooks. They were also informed that the identities of all online vendors had been disguised for the purpose of the study. In fact, all participants completed the task for the same retailer (code-named "Academic Reads") and considered an identical set of textbooks. After evaluating the focal retailer by searching its website, subjects were asked to complete a questionnaire which included measures of perceived trustworthiness and preference.

Participants were required to search for eight book titles, which were provided to them by the experimenter, in order to form an overall impression of the online retailer that they were asked to evaluate. In addition to the focal vendor's online store, participants also used an independent source of comparative price information, which was provided by the experimenter and described as an unbiased and accurate tool for online price searches. On completion of each search for a particular book within the focal retailer's online store, subjects were automatically transferred to a different web

site, on which an alphabetical list of seven retailers carrying this book – the focal retailer plus six competitors – was generated dynamically. They were asked to check each vendor's price for the book, which required clicking on the name of each store on the list. For each of the eight books, participants were asked to record, on a paper form, the focal retailer's price and whether or not each competitor's price was lower than, equal to, or higher than the focal vendor's price.

Study participants were randomly assigned to one of six experimental conditions in a 2 (provision of access) × 3 (objective market position) between-subjects full-factorial design.

The *provision of access to uncensored competitor price information* by the focal online retailer (PA-no or PA-yes) was manipulated in the following manner. In the *PA-no* condition, the only information provided by the focal vendor, in response to a shopper's product search, pertained to its own offering. That is, the search results page contained the book title, author, publisher, ISBN number and the retailer's own current price. By contrast, in the *PA-yes* condition, the focal retailer provided not only information about its own offering, but also a list of all major online vendors that offered the target book at the lowest available price that day. Whether or not the focal retailer itself was included in this list for a particular book depended on its market position (see the following). Participants were told that the information provided by the focal retailer was obtained in an automated, systematic search of the major competitors' web sites, and that this information was updated daily. An example of the search results page in the condition in which access to competitor price information was provided can be found in

Appendix C. In the *PA-no* condition, only the top portion of this display (i.e., only information about the focal vendor's own offering) was available to participants.

The *objective market position* of the focal retailer (unfavorable, moderate or favorable) was manipulated by varying the latter's prices for the eight products, while holding the prices of the six competitors constant. Table 1 provides an overview of the focal retailer's prices for the three levels of market position, as well as of the prices of each of the six competitors.

Table 1: Prices of the Focal Online Retailer (3 levels of Objective Market Position) and of the Six Competitors (Study 1)

	Focal Retailer (Academic Reads)			*Competitors*					
	Objective Market Position			*Strong*		*Average*		*Weak*	
Book #	*Unfavorable*	*Moderate*	*Favorable*	*Knowledge Central*	*Varsity Learning*	*Campus Connection*	*University Supply*	*College Necessities*	*Textbooks Online*
1	95	**90**	**90**	**90**	**90**	**90**	95	95	95
2	75	75	**70**	**70**	75	75	**70**	**70**	75
3	79	**74**	**74**	**74**	**74**	79	**74**	79	79
4	87	87	**82**	87	**82**	**82**	87	87	**82**
5	85	85	**80**	85	**80**	85	**80**	**80**	85
6	77	**72**	**72**	**72**	**72**	**72**	77	77	77
7	69	69	**64**	**64**	69	**64**	69	69	**64**
8	89	**84**	**84**	**84**	**84**	89	**84**	89	89
Avg.:	*82*	*79.5*	*77*	*78.25*	*78.25*	*79.5*	*79.5*	*80.75*	*80.75*
Bold indicates lowest available price									

The *favorable* market position was constructed such that the focal vendor had the lowest available price for each of the eight products. In each instance, the retailer was tied for the lowest price with three of its competitors. In the case of a *moderate* market position, the focal online retailer was tied for the lowest available price for four of the products, but was dominated on price by some competitors in connection with the other

four products. The *unfavorable* objective market position was constructed such that the focal vendor was dominated on price by some competitors in connection with all eight products. In the three treatments of objective market position, the focal online retailer's average price across the eight product searches was either lower than that of any competitor (favorable), equal to the market average (moderate), or higher than that of any competitor (unfavorable).

Upon completion of the price searches for the eight textbooks, participants were automatically transferred to a computer-based questionnaire. In addition to manipulation checks with respect to the two experimental factors, this questionnaire included multiple measures of both the perceived trustworthiness of and preference for the focal online retailer. Five bipolar nine-point rating scales were used to measure trustworthiness. These scales were anchored *undependable-dependable, dishonest-honest, unreliable-reliable, insincere-sincere, and untrustworthy-trustworthy*. One measure of the preference for the focal vendor was based on the question "If you were to purchase textbooks from an online retailer, how likely would you be to purchase them from Academic Reads?" Participants responded using a rating scale anchored from 1 *(not at all likely)* to 9 *(very likely)*. In addition, participants completed two pair-wise choice tasks. In each of these, they were asked to choose between the focal retailer and one of the two strongest competitors — code-named "Knowledge Central" in the first and "Varsity Learning" in the second choice task — for their next major textbook purchase. In addition to providing a binary choice response for each choice set, participants also indicated the strength of their preference by stating how many percentage points of

(additional) price discount the less preferred retailer would have to offer them to make that vendor equally attractive to the one they chose.

To make the experimental task more consequential to participants, a probabilistic monetary incentive, linked directly to an individual's preference for the focal retailer in the pair-wise choice tasks, was provided. Specifically, one randomly-selected participant received a discount of at least 50% on his/her next textbook purchase from one of the online vendors. In the description of the task and the verbal instructions given by the experimenter, subjects were told that they had a chance to win a discount coupon worth at least 50% off (max. value of $100) their next online textbook purchase. They were also informed that the retailer at which the coupon could be redeemed and the exact percentage discount received would be determined by their individual responses in the study, so their true opinions were very important. Upon request, subjects were also provided with a more detailed explanation of how the exact value of the discount coupon was determined (see below). The specific retailer and the exact number of percentage points for the discount were determined as follows. First, one of the two choice sets was selected at random. Next, a number α was selected in a random draw from a continuous uniform distribution ranging from 0 to 50. If this number exceeded the number of percentage points of additional discount that the participant indicated was required of the less-preferred retailer to cause him/her to be indifferent between the two vendors in the choice set, the prize consisted of a coupon for a $50+\alpha$ percent discount on a textbook purchase from the initially less-preferred vendor. Otherwise, the prize was a coupon for a 50% discount on a textbook purchase from the preferred vendor.

3.2: Results – Study 1[4]

Manipulation Checks

With respect to the access-to-competitor-information manipulation, the mean rating of the focal retailer's willingness to help customers determine which stores sell a product at the lowest price, on a scale from 1 *(low)* to 9 *(high)*, was significantly higher in the *PA-yes* ($M = 7.03$) than in the *PA-no* ($M = 5.78$) conditions ($F_{1,115} = 13.24$, $p < 0.001$). For the manipulation of objective market position, the mean rating of the focal vendor in terms of the prices in charges, on a scale from 1 *(bad)* to 9 *(good)*, varied significantly across the three levels of this factor ($F_{2,115} = 46.41$, $p < 0.001$), with means for the *unfavorable* ($M = 3.63$), *moderate* ($M = 5.40$), and *favorable* ($M = 7.47$) conditions in the expected order. Based on planned contrasts tests, all pair-wise mean differences for objective market position are significant at $p < 0.001$. Thus, I conclude that the manipulations of both experimental factors were successful.

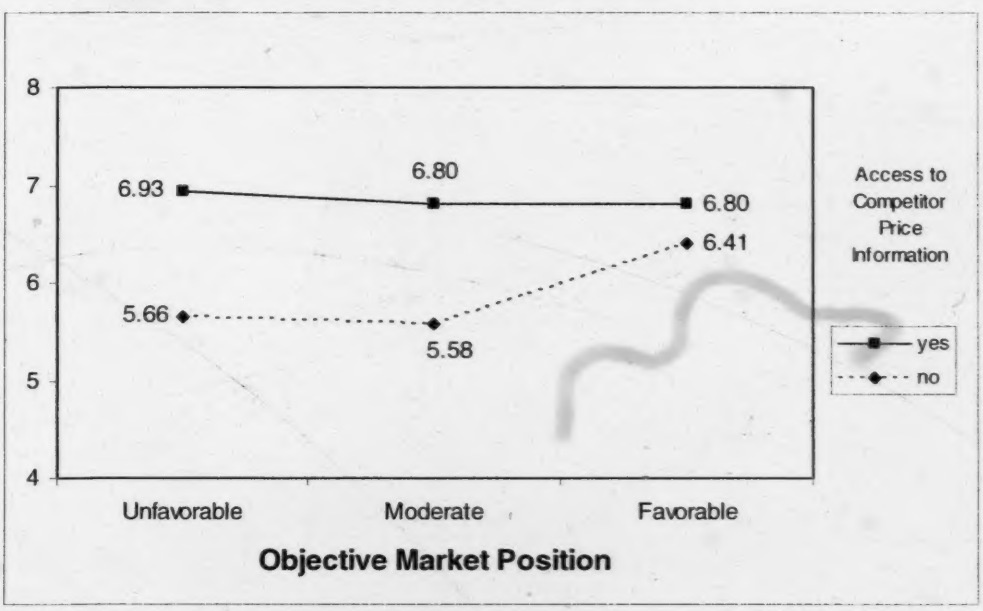
Perceived Trustworthiness

My prediction has been that providing access to competitor information enhances a firm's perceived trustworthiness (see H_1). The latter was measured using five nine-point rating scales (previously mentioned). Given the high reliability of these five measures (Cronbach's $\alpha = 0.94$), a participant's average rating over the five items, with higher values corresponding to greater trustworthiness, was used as a compound measure. As predicted, providing access to competitor price information had a significant positive effect on the perceived trustworthiness of the focal online retailer. The mean responses for the *PA-yes* ($M = 6.83$) and *PA-no* ($M = 5.93$) conditions differed significantly from

[4] Only results pertaining to the hypotheses discussed in Chapter 2 are presented in this section. For detailed results, see Trifts and Häubl (2003).

each other in the expected direction ($F_{1,115} = 15.13$, $p < 0.001$). The focal retailer's objective market position did not have a main effect on perceived trustworthiness ($F_{2,115} = 1.13$, $p > 0.2$), and its overall interaction with the provision of access to competitor information is also not significant ($F_{2,115} = 1.48$, $p > 0.2$). Thus H_4 is not supported. However, in examining the mean responses across conditions, it is evident that the main effect of the provision of access to competitor information is driven primarily by large differences between the *PA-yes* and *PA-no* conditions when market position was *unfavorable* or *moderate*.

Figure 2: Perceived Trustworthiness of the Focal Retailer (Study 1)



Preference

I have hypothesized that preference for an online retailer will be greater when the latter provides access to uncensored information about competitors than when it does not (H_2). I have also expressed the prediction that a retailer's perceived trustworthiness will have a positive effect on consumer preference (H_3), suggesting the possibility that the

impact of providing access to competitor price information on preference may be mediated by the vendor's perceived trustworthiness. Preference for the focal online retailer was measured in terms of participants' stated likelihood of choosing the vendor for their next textbook purchase, as well as via two paired-choice tasks that also involved indicators of strength of preference.

In terms of the likelihood-based measure, subjects responded to the question, "If you were to purchase textbooks from an online retailer, how likely would you be to purchase them from Academic Reads?" For this particular measure, I do not find support for the hypothesized main effect of providing access to competitor information (H_2) ($\beta = 0.393$, t-value = 1.23, $p > 0.20$). However, subject's differential usage of the scale may have been confounded with this effect, producing the non-significant result on the stated preference measure. Additionally, given that choice data represents revealed preference, it is more representative of actual behavior than the likelihood-based measure. The effects on choice will be discussed in the next paragraph. The perceived trustworthiness of the focal online retailer had a strong positive impact on the likelihood-based measure of consumer preference, thus supporting H_3 ($\beta = 0.610$, t-value = 4.13, $p < 0.001$).

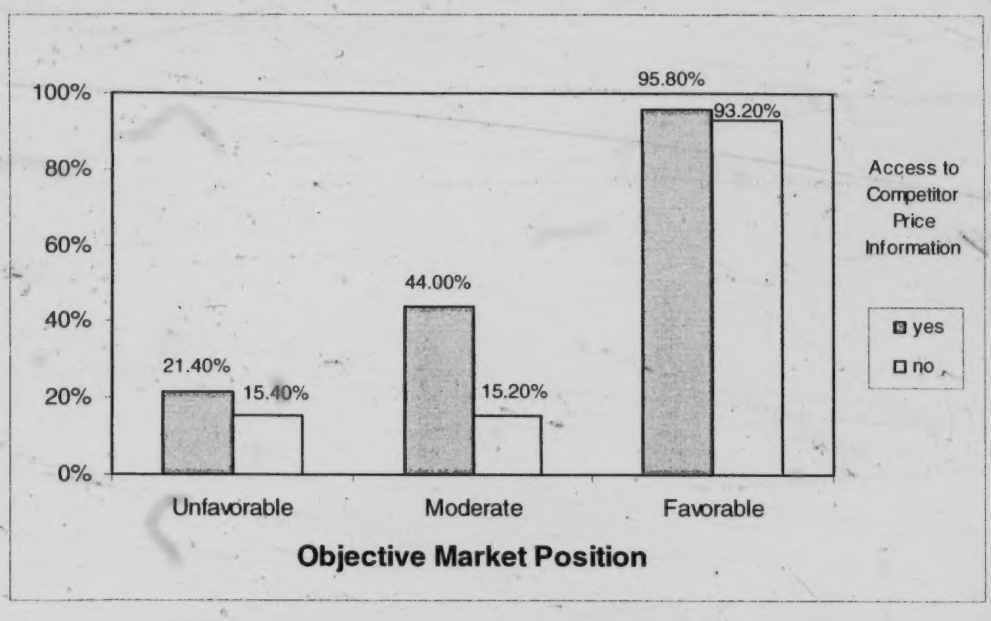
I now turn to the evidence from the two paired-choice tasks, in each of which respondents were asked to choose between the focal online retailer (Academic Reads) and one of the two strongest competitors for their next major textbook purchase. First, I examine the choice shares of the focal vendor in these tasks. Consistent with H_2, the choice of retailer was affected by whether or not the focal online retailer provided access to uncensored information about its competitors. Academic Reads was significantly more

likely to be selected by participants for their next major textbook purchase when it provided such access than when it did not, and this was the case in both the first ($\beta = 0.658$, Wald = 3.73, $p < 0.05$, 1-tailed) and the second ($\beta = 0.828$, Wald = 5.03, $p < 0.05$) choice task. Including the vendor's perceived trustworthiness as an additional predictor in this logistic regression model reveals that, as predicted in H_3, this construct had a positive effect on choice probability (first choice task: $\beta = 0.527$, Wald = 4.84, $p < 0.05$; second choice task: $\beta = 0.531$, Wald = 5.08, $p < 0.05$). Moreover, when accounting for variability in perceived trustworthiness, the (additional) effect of providing access to competitor price information is no longer statistically significant ($p > 0.1$ in both choice tasks). Finally, removing access to competitor information from the models that also include trustworthiness as an independent variable only reduces the R^2 value from 0.463 to 0.458 (first choice task) and from 0.457 to 0.447 (second choice task), which suggests that the effect of providing access to uncensored competitor price information on the retailer's choice probability is almost entirely mediated by perceived trustworthiness.

An in-depth examination of the choice shares suggests that the overall positive effect of providing access to competitor information on preference for the focal online retailer is due primarily to a very substantial difference between the *PA-yes* and *PA-no* conditions in the case where this vendor's objective market position was moderate. In this scenario, the focal retailer's choice share across the two paired-choice tasks was 44 percent when it provided access to competitor price information and only 15.2 percent when it did not. (Due to the high consistency in responses across the two choice tasks, I report the pooled shares.) This difference in choice shares is statistically significant

($\beta = 1.317$, Wald = 4.91, $p < 0.05$), whereas providing access to competitor information did not have a significant effect on choice shares at either the unfavorable or the favorable level of objective market position. Thus, a retailer whose objective market position is moderately favorable may benefit more from providing access to uncensored competitor price information than vendors with either unfavorable or extremely favorable objective market positions. While this non-effect in the *favorable* condition resulted from an apparent ceiling effect, it is consistent with proposed theory. First, the model predicts that trust will develop in the presence of negative information. Price comparisons in the *favorable* condition always favor the focal vendor and thus, providing such access does not enhance the perceived trustworthiness of a favorably positioned vendor. In addition, firms occupying a very favorable market position are already perceived as objectively superior to their competitors. Therefore, there is nothing more to gain by providing access to competitor information. The choice shares of the focal retailer in each of the six experimental conditions, combined for the two choice tasks, are provided in Figure 3.

Figure 3: Choice Share of the Focal Retailer (Study 1)



My final measure of preference is based on graded paired comparisons in the context of the two paired-choice tasks, which are substantially more fine-grained indicators of relative preference for the focal retailer and thus contain richer preference information than the mere binary choice responses. For each choice set, in addition to selecting their preferred vendor, participants also indicated the strength of their preference for the chosen retailer by reporting how many percentage points of additional price discount the less preferred retailer would have to offer them to make that vendor equally attractive to the one they did choose. These percentages were converted into a graded-paired-comparison score through multiplication by either 1, if the focal retailer was preferred, or −1, if the competitor was preferred. The resulting score represents the extent of relative preference for the focal retailer.

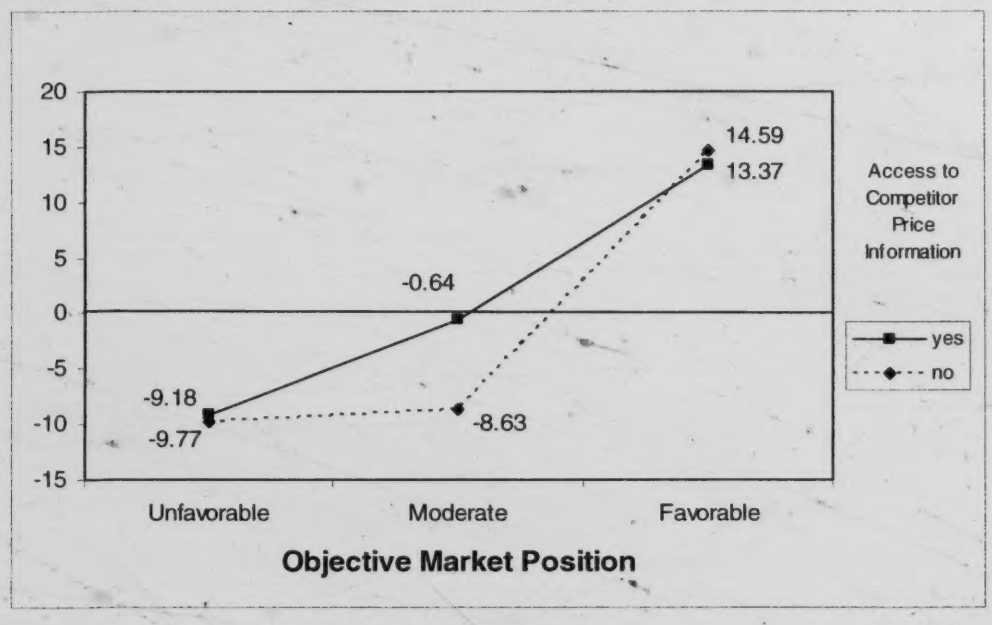
The graded-paired-comparison scores were used as the dependent variable in a multiple regression model for each choice task. The results of these analyses corroborate

the findings based on the raw choices. As predicted in H_2, relative preference was affected by whether or not the focal retailer provided access to uncensored competitor information. The graded-paired-comparison score for Academic Reads was significantly higher when it provided such access than when it did not, and this was the case in connection with both the first ($\beta = 3.62$, t-value = 1.79, $p < 0.05$, 1-tailed) and the second ($\beta = 4.37$, t-value = 2.09, $p < 0.05$) choice task. Including the focal vendor's perceived trustworthiness as an additional independent variable in this regression model reveals that, consistent with H_3, this construct had a positive effect on relative preference for that retailer (first choice task: $\beta = 1.68$, t-value = 1.70, $p < 0.05$, 1-tailed; second choice task: $\beta = 1.93$, t-value = 1.89, $p < 0.05$, 1-tailed). Moreover, when accounting for variability in perceived trustworthiness, the additional effect of providing access to competitor price information is no longer statistically significant ($p > 0.2$ for both choice tasks). Finally, removing access from the models that also include trustworthiness as a predictor only reduces the R^2 value from 0.351 to 0.348 (first choice task) and from 0.332 to 0.326 (second choice task), which suggests that the effect of providing access to uncensored competitor information on relative preference for the retailer is almost completely mediated by its perceived trustworthiness.

As was the case with the choice shares, an in-depth examination of the extent of relative preference for the focal online retailer across the experimental conditions suggests that the overall positive effect of providing access to uncensored competitor price information on preference for the focal vendor is due almost exclusively to a substantial difference between the *PA-yes* and *PA-no* conditions in conjunction with the moderate level of objective market position. In this case, participants' relative preference

for the focal retailer was stronger, on average across participants and choice tasks, by 8 percentage points (in terms of price discount) when it provided access to competitor price information than when it did not. (Due to the high consistency in responses across the two choice tasks, I report the pooled results.) Although this difference is statistically significant (first choice task: $t_{46} = 1.71$, $p < 0.05$, 1-tailed; second choice task: $t_{46} = 2.03$, $p < 0.05$), access provision had no effect on relative preference at either of the extreme levels of the focal retailer's objective market position. Thus, the potential to benefit from providing access to uncensored competitor information appears to be particularly strong for retailers who occupy a moderately favorable market position. The mean scores of relative preference for the focal retailer in each of the six experimental conditions, combined for the two choice tasks, are provided in Figure 4.

Figure 4: Relative Strength of Overall Preference for the Focal Retailer (Study 1)



3.3: Discussion – Study 1

The focus of this study has been on an increasingly feasible application of information technology in electronic shopping environments, the provision of direct access to uncensored competitor price information by an online retailer. I have examined the effects of the provision of such access by an electronic store on consumers' perceived trustworthiness of, and long-term preference for, that vendor. The findings of this study suggest that, under certain circumstances, an online retailer may benefit from providing its (potential) customers with direct access to its competitors' prices for comparable products.

An important aspect of consumers' reactions to the provision of competitor price information by an electronic store is a substantial increase in the perceived trustworthiness of the vendor. Providing access to competitor information is a type of communication openness on the part of the retailer and, in particular, one that is highly relevant to shoppers' task goals. Furthermore, providing convenient access to market information that might otherwise be difficult to obtain — and that may be unfavorable from the online store's perspective — will tend to create the perception that the firm makes a deliberate effort to assist consumers in making a good purchase decision. My results indicate that providing direct access to uncensored information about competitors' product offerings is a powerful way for a retailer to establish or enhance consumer trust, and that this trust benefits store preference.

My primary focus has been on the effects of an electronic retailer's provision of access to competitor price information on consumer preference. The findings of this study suggest that, consistent with the prediction based on signaling theory, providing

such access may have a strong positive impact on shoppers' perceived trustworthiness (H_1) and longer-term preference (H_2) for the online store. In addition, the results demonstrate that the positive effect of providing access to competitors' prices on consumer preference for a retailer is mediated by perceived trustworthiness (H_1 and H_3). While I did not find support for the moderating effect of objective market position on the relationship between the provision of access to competitor information on perceived trustworthiness (H_4), the results show a substantial positive effect of providing such access on consumers' long-term preference when an online retailer occupies a moderate objective market position, but not when it is either clearly superior or obviously inferior to its competitors.

An unanticipated finding from this study was that providing access to competitor information had an adverse effect on consumers' overall preference for the *PA-yes* retailer. Thus, the potential positive effect of providing such access may have been understated in this study. This adverse effect is particularly evident upon examination of the choice shares for the moderately positioned retailer. In this case, given the fact that the objective market positions of the focal retailer and its closest competitor were identical, one would anticipate a choice share of at least 50% for the focal retailer when paired with its competitor in a binary choice task. However, the focal retailer's actual choice share was substantially lower overall (less than 30%), and the relative preference measure for the moderately positioned retailer indicated an overall preference for the competitor. One explanation of this finding relates to the manner in which subjects were required to obtain price information from external sources. After searching for a textbook, subjects were required to examine the external information source for all

competing retailers, including the focal retailer. This forced exposure may have seemed redundant to subjects who were able to find much of the information required on the focal retailer's website. This additional effort required may have been construed as excessively time-consuming and unnecessary. While subjects were told that this was meant as a check of the retailer's accuracy, it could have caused frustration on the part of those subjects who already knew the information they were required to view. Furthermore, the nature of the external information source used was such that subjects may have had trouble distinguishing between the two information sources – i.e., information provided internally from the focal retailer and information obtained via external sources. If this were the case, then the frustration experienced by subjects as a result of the forced exposure in the external acquisition task may have been attributed directly to the focal retailer. While this forced exposure was required for both levels of access, it is more likely that subjects would experience frustration in the condition where access to competitor price information was already supplied by the focal retailer, as the information provided by the external source would be redundant. Support for this explanation can be found in the mean responses to the provision-of-access manipulation check measure. Even in the condition in which no access to competitor information was provided, subjects' mean response to this question was 5.78 on a scale from "1" to "9." While significantly different from the mean response of 7.03 for the condition in which access was provided, it still implies that subjects may have had trouble separating the information obtained from the focal retailer and that obtained through the external (i.e., experimenter) source. Therefore, a second experiment was designed to address this issue that included the physical separation of the two information sources. That is, external

information was provided by the experimenter as a typed, industry-wide price list that subjects could refer to if needed, thereby eliminating the potential problems associated with forced exposure.

3.4: Method – Study 2

In this study, forced exposure was eliminated by physically separating the two information sources. Rather than having to access external competitor information via the online links described in Study 1, subjects were provided with a typed, industry-wide price list that they could use at their discretion. The product category was also changed from textbooks to jackets, with pictures of the products available on the search results pages.

One-hundred and ten undergraduate business students participated for partial course credit and a lottery incentive tied directly to the winner's individual responses in the choice task. As in Study 1, informed consent was obtained (see Appendix D) and a description of the task was provided (see Appendix E) prior to commencing the study. Subjects were told that the University was considering purchasing a membership, on behalf of its students, to a major online retail club, which would offer them substantial discounts on a wide variety of products. After reading the instructions, subjects were required to search for information about 8 jackets and record the price information for the focal retailer and two of its strongest competitors. In addition to the information provided by the online retailer, subjects were able to use the industry price list to find relevant information.

Study participants were randomly assigned to one of six experimental conditions in a 2 (provision of access) × 2 (objective market position) between-subjects full-factorial design.

The *provision of access to uncensored competitor price information* by the focal retailer (*PA-no* or *PA-yes*) was manipulated in the following manner. Subjects in the *PA-no* condition were only provided information pertaining to the retailer's own product offerings. The search results page provided consumers with a picture of the jacket in two colors, the brand and model names, information on available sizes and colors, a general description of its features, and prices. In addition to this information, subjects in the *PA-yes* condition were supplied with the lowest three prices currently available online. This information differed somewhat from that of Study 1, where subjects were only given information on the retailers selling at the lowest price available. Appendix F provides an example of the search results page under the condition in which access to competitor information was provided. In the *PA-no* condition, only the top portion of this information was available.

The *objective market position* of the focal retailer was manipulated in a similar manner as the previous study in terms of the overall average prices and structure of each individual comparison. However, one additional level of price was added to the design to provide more price variability in the options to which subjects were exposed (see Table 2).

Table 2: Prices of the Focal Online Retailer (3 levels of Objective Market Position) and of the Two Competitors (Study 2)

	Focal Retailer (Access Club)			*Competitors*	
	Objective Market Position				
Jacket #	*Unfavorable*	*Moderate*	*Favorable*	*Easy Store*	*Super E-tail*
1	$85.99	**$80.99**	**$80.99**	$85.99	$83.49
2	$49.99	$49.99	**$44.99**	**$44.99**	$47.49
3	$75.99	**$70.99**	**$70.99**	$73.49	$75.99
4	$59.99	$59.99	**$54.99**	$57.49	**$54.99**
5	$69.99	$69.99	**$64.99**	$67.49	**$64.99**
6	$65.99	**$60.99**	**$60.99**	$63.49	$65.99
7	$79.99	$79.99	**$74.99**	**$74.99**	$77.49
8	$55.99	**$50.99**	**$50.99**	$55.99	$53.49
Avg:	*$67.99*	*$65.49*	*$62.99*	*$65.49*	*$65.49*
Bold indicates lowest available price					

The industry-wide price list included all relevant information subjects were required to search, plus additional information for five other retailers and several other products available (See Appendix G). Three different lists were designed to reflect the price variations across the three levels of objective market position. The additional retailers on the list were all dominated by the top three retailers that the subjects were required to find information about.

After completing their information search, subjects were taken to a questionnaire containing the same measures collected in Study 1. When subjects had finished the experiment, they were debriefed and then dismissed. After all lab sessions were completed, subjects were sent a more detailed, written debriefing via e-mail.

3.5: Results – Study 2

Manipulation Checks

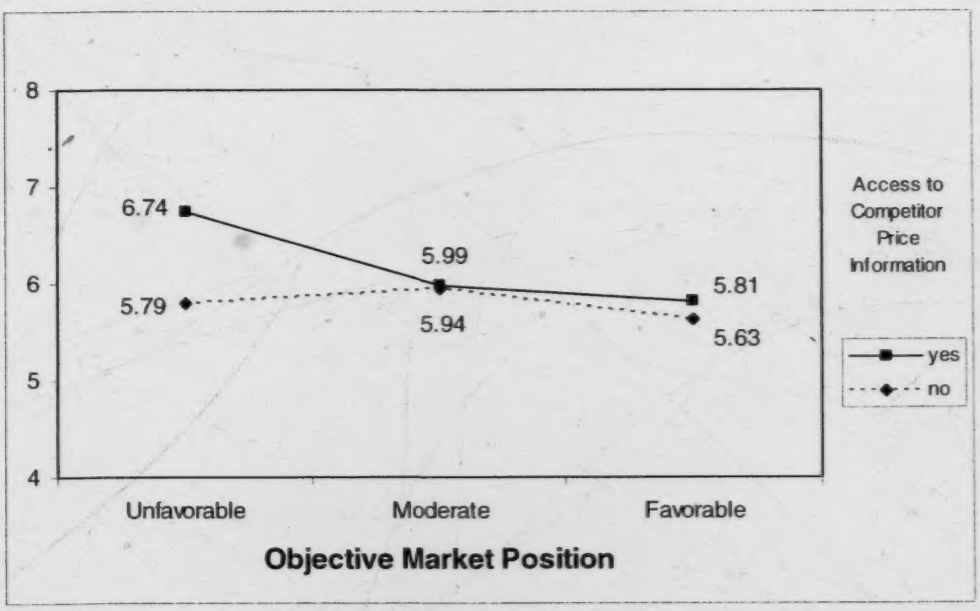
With respect to the access-to-competitor-information manipulation, subjects were asked, "Based only on the information provided to you by Access Club (and excluding anything supplied to you by the experimenter), how would you rate this club on its willingness to allow customers access to competitive prices within its own website?" An ANOVA revealed that the mean responses for the *PA-no* ($M = 4.50$) vs. *PA-yes* ($M = 7.30$) conditions on a scale from 1 (*bad*) to 9 (*good*) were significantly different from each other in the expected direction ($F_{1,104} = 57.31$, $p < 0.001$). The adjusted R^2 is 0.342. For objective market position, subjects were asked to respond to the question, "Overall, how would you rate Access Club, in relation to its competitors, in terms of the prices it charges?" An ANOVA confirms that the mean responses on a scale from 1 (*bad*) to 9 (*good*) for the *unfavorable* ($M = 4.16$), *moderate* ($M = 6.35$), and *favorable* ($M = 7.25$) levels of objective market position are all significantly different than each other and in the expected direction ($F_{2,104} = 34.36$, $p < 0.001$). The adjusted R^2 is 0.384. Based on planned contrast tests, the pair-wise mean difference between the *unfavorable* and *moderate* conditions is significant at $p < 0.001$, the *moderate* and *favorable* at $p < 0.01$, and the *unfavorable* and *favorable* at $p < 0.001$.

Perceived Trustworthiness

Reliability analysis for the five-item trust scale (described in Study 1) indicated a strong correlation between measures (Cronbach's $\alpha = 0.91$) and, therefore, the average score across the five measures was used as a single measure of perceived trustworthiness. As predicted, providing access to competitor information had a significant positive effect

on the perceived trustworthiness of the focal retailer ($F_{1,104} = 3.797$, $p < 0.05$). Subjects in the *PA-yes* condition ($M = 6.18$) rated the focal retailer as significantly more trustworthy than subjects in the *PA-no* condition ($M = 5.78$), lending further support to H_1. Consistent with Study 1, the focal retailer's objective market position did not have a main effect on perceived trustworthiness, and its overall interaction with the provision of access to competitor information is also not significant. Thus, H_4 is not supported (see Figure 5).

Figure 5: Perceived Trustworthiness of the Focal Retailer (Study 2)

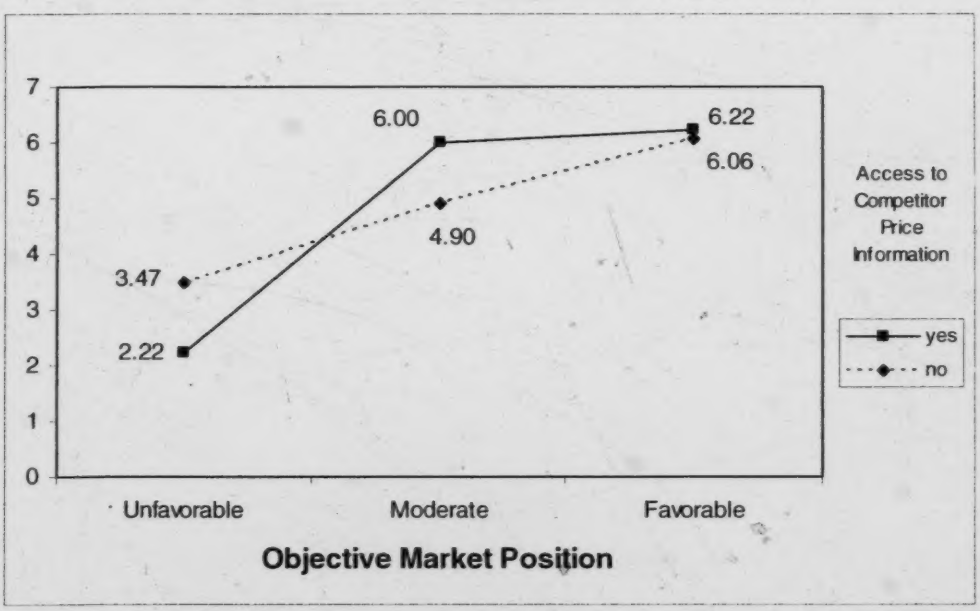


Preference

In terms of the likelihood-based measure of consumer preference, the main effect of providing access to competitor information (H_2) is not supported, nor is the predicted effect of perceived trustworthiness on preference (H_3). Contrary to prediction, it appears that perceived trustworthiness of the focal retailer was actually negatively related to consumers' overall stated preference for the focal retailer ($\beta = 0.57$, t-value = 2.79, $p < 0.01$). However, the partial η^2 for this measure was only 0.07, indicating that

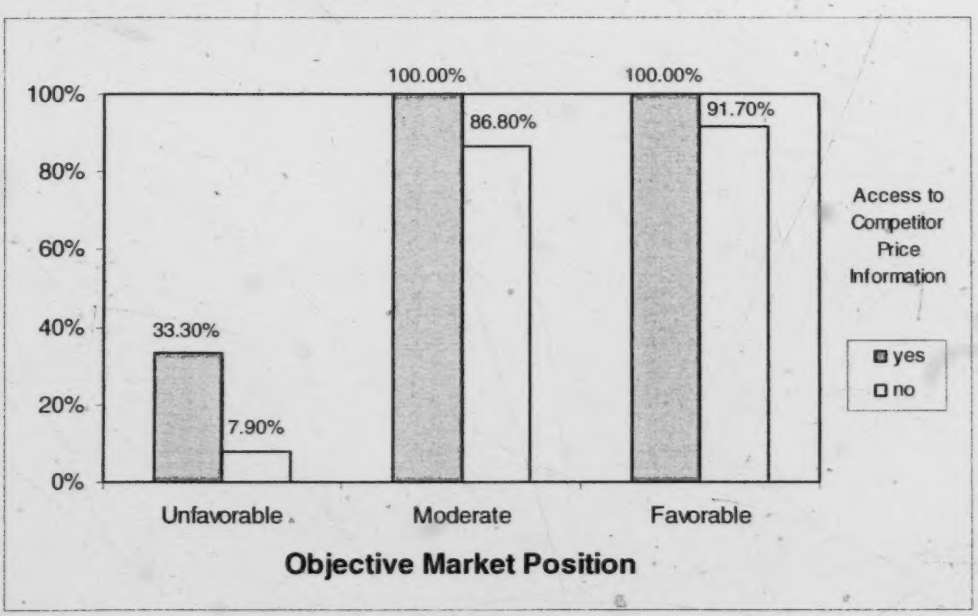
perceived trustworthiness only accounted for a small proportion of the total variability in the stated preference measure. Preference for the focal retailer was driven primarily by the objective market position of the firm, as the effect of this variable on stated preference is highly significant ($F_{2,104} = 21.53$, $p < 0.001$) and accounts for a very large proportion of the variability in the dependent measure (partial $\eta^2 = 0.293$). The interaction between the provision of access to competitor information and the objective market position of the firm is also significant ($F_{2,104} = 2.54$, $p < 0.05$ 1-tailed). The effects outlined in Figure 6 can be explained by the very large main effect of objective market position. Because the effect of market position was so strong, providing access to competitor information in the *unfavorable* condition further highlighted the fact that competitors dominated the focal retailer on price. Hence, consumers' preference for the *PA-yes* retailer was weaker than the *PA-no* retailer.

Figure 6: Stated Preference for the Focal Retailer (Study 2)



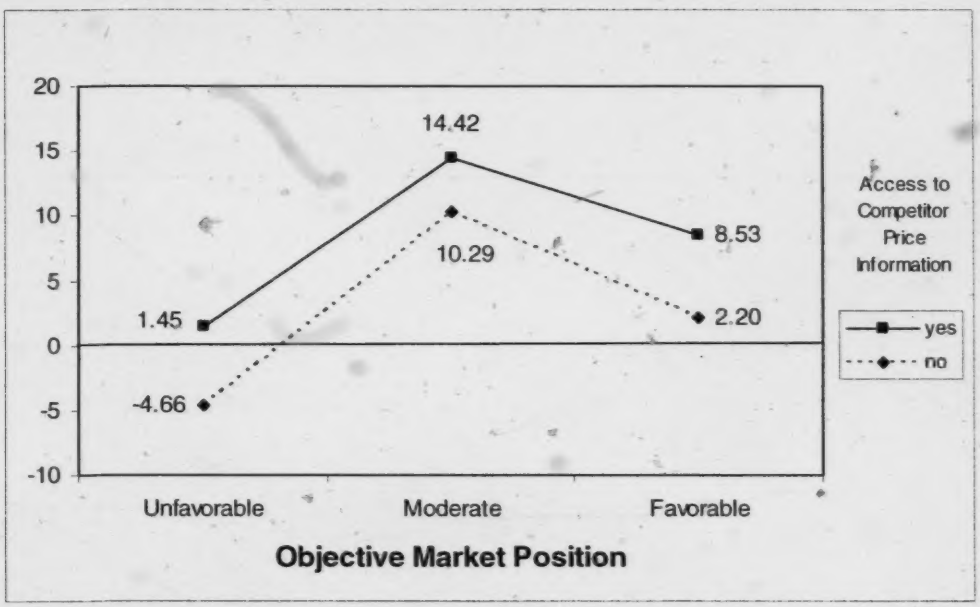
Across both pair-wise choice tasks, subjects in the *PA-yes* condition chose the focal retailer approximately 78% of the time whereas subjects in the *PA-no* condition chose the focal retailer only 62% of the time. Logistic regression reveals a significant effect of providing access to competitor information on subjects' choice in both the first choice task ($\beta = 2.343$, Wald = 4.57, $p < 0.05$) and the second choice task ($\beta = 2.17$, Wald = 7.07, $p < 0.01$) (Figure 7). However, this effect does not appear to be mediated by perceived trustworthiness, as the effect of adding this variable into the model is non-significant. It is also interesting to note that the greatest gains in choice shares occur in the *unfavorable* market position condition, which also saw the greatest difference in perceived trustworthiness between the *PA-yes* and *PA-no* conditions. However, these results could be the result of the ceiling effect observed in the *moderate* and *favorable* market position conditions in which all subjects in the *PA-yes* conditions chose the focal retailer in both pair-wise choice tasks.

Figure 7: Choice Share of the Focal Retailer (Study 2)



ANOVA results of the graded paired comparison data also provide support for hypothesis H_2. That is, the strength of consumers' relative preference for the focal retailer was greater when it provided access to competitor information than when it did not in both the first choice task ($F_{1,104} = 3.924$, $p < 0.05$) and the second ($F_{1,104} = 5.529$, $p < 0.05$) (see Figure 8). However, the level of perceived trustworthiness of the focal retailer had no effect on the strength of subjects' choices and thus, H_3 is not supported.

Figure 8: Relative Strength of Overall Preference for the Focal Retailer (Study 2)



3.6: Discussion – Study 2

The results of this study are somewhat mixed when compared to the findings of Study 1. In sum, results of this study provide support for H_1 and H_2, but fail to support H_3 and H_4. However, some interesting conclusions can be drawn from this data. First, as expected, removing the forced exposure to competitor information and allowing subjects to control what information about competitors they searched externally appears to result in a vast improvement of their overall preference for the focal retailer. While other

factors contributing to this effect cannot be entirely ruled out (e.g., the change in product category and descriptions), the results are consistent with the possibility that subjects in Study 1 may have had difficulty distinguishing between information provided by the focal retailer and that obtained through independent sources. While the greatest difference in the level of perceived trustworthiness of the *PA-yes* versus the *PA-no* retailer occurs when the focal retailer's objective market position was *unfavorable*, a closer look at subjects' perception of market position indicates that the overall mean response was very close to the scale midpoint and that subjects in the *PA-yes* condition rated the focal agent's prices on the nine point scale as 4.66, which indicates that they perceived very little difference between the focal retailer's market position and that of its competitors.

3.7: General Discussion of Studies 1 and 2

A summary of the basic findings from Studies 1 and 2 are outlined in Table 3. In general, providing access to competitor information was found to increase subjects' perceived trustworthiness (H_1) and revealed preference (H_2) for the retailer providing such access. These effects were strong and consistent across both studies. However, the basic effect of providing access did not significantly influence the likelihood-based measure of preference in either study. As mentioned previously, this non-effect may have resulted from variation in subjects' usage of the scale. Since the provision of access to competitor information was manipulated as a between-subjects variable, subjects were unable to make relative comparison between the retailer that provided access to competitor information and the one that did not provide such access. To address this

issue, the provision of access to competitor information will be manipulated as a within-subject variable in the next study.

Table 3: Summary of Findings (Studies 1 and 2)

Hypotheses	*Results*	
	Study 1	*Study 2*
H_1:Provision of Access positively affects Perceived Trustworthiness	Supported	Supported
H_2:Provision of Access positively affects Preference	Supported for both revealed preference measures; not supported for likelihood-based measure	Supported for both revealed preference measures; not supported for likelihood-based measure
H_3: Perceived Trustworthiness positively affects Preference	Supported for both revealed preference measures; not supported for likelihood-based measure	Not supported
H_4: Objective Market Position moderates the relationship between Provision of Access and Perceived Trustworthiness	Not supported	Not supported

Evidence pertaining to the mediating role of perceived trustworthiness on the relationship between the provision of access to competitor information and preference is mixed. While strong support for this prediction is found for the revealed preference measures in Study 1, this effect is not supported by the data from Study 2. This non-effect of perceived trustworthiness on preference from Study 2 may be attributed to the much weaker effects of providing of access to competitor information in general, and specifically with respect to its effect on perceived trustworthiness. This may also account for the non-significant effect predicted by H_4, and so this hypothesis will be re-examined in Study 3.

While these initial findings as to the nature of the effects of providing access to competitor information on consumer preference are encouraging, several key limitations

of this research need to be addressed. First, these results were examined in the context of providing access to competitor *price* information only. Because subjects were searching for the same products across multiple vendors, the only differentiating product attribute was price. Furthermore, the comparative information only featured the prices charged by competing retailers. These two factors would greatly enhance the salience of price information in the decision making process to the point that subjects may have used price information almost exclusively in their decision making. Across both studies, the effects of objective market position of the firm on all three measures of preference were highly significant, indicating that price played a very important role in determining consumer preference.

The results of Studies 1 and 2 pertain to a pattern of consumers' behavior related directly to their search for, and purchase of, search goods, namely textbooks and jackets. Because product quality differences across vendors were irrelevant in these studies, trust may not have played a central role in determining consumer preferences. Further work is needed to examine the effects of the provision of access to competitor information in a context in which trust is likely to play a more central role in consumer decision making, such as in the case of consumer search and purchase of an experience good. In the next two chapters, I present evidence from three additional experiments in which subjects shopped for vacation destination packages at online travel agents.

Another key issue which needs to be addressed pertains to potential differences between consumers' short-term, individual purchases and their long-term firm choice. While the two studies described in this chapter examine only the effects of the provision of access to competitor information on consumers' long-term preference for an online

vendor, the studies outlined in Chapters 4 and 5 will also look at the effects of such access on both individual destination choices and long-term firm preference.

Other issues regarding the effects of the provision of access that were not addressed in this preliminary investigation include examining the moderating role of the cost of independent search (see H_5) and the level of decision ambiguity (see H_6) in the relationship between the provision of access to competitor information and consumer preference. The information-based effects of providing such access (H_7 through H_9) will also be tested in the subsequent studies. Finally, the sustainability of the effect of providing access to competitor information in situations where the provision of access is systematically reduced will also be examined.

Chapter 4: The Provision of Access to Competitor Information in Ambiguous Information Environments

In this chapter, the moderating effect of decision ambiguity on the relationship between the provision of access to competitor information and consumer preference will be explored. Relative to Studies 1 and 2, several key changes to the design of Studies 3 and 4 were made. First, the provision of access to competitor information is implemented as a within-subject manipulation to allow for a richer number of dependent measures, including both individual purchase level and overall firm choices between the *PA-yes* and the *PA-no* firms. The within-subject manipulation should also strengthen the effects of the provision of access to competitor information by enabling subjects to better detect difference between the degrees to which such access is provided by the two firms. Finally, the within-subject manipulation of the provision of access variable results in an experimental task that is more consistent with actual purchase behavior. That is, rather than evaluating a retailer relative to other competitors in the marketplace that subjects are not examining directly, subjects are asked to make a series of choices between two retailers with whom they had an equal opportunity to shop at. The product category is also changed to one with greater experiential properties, namely vacation packages, in which the development of trust is likely to play an even greater role in the formation of consumer preferences. Furthermore, the nature of the comparative information is enriched to include full product descriptions rather than merely price information.

4.1: Method – Study 3

In this study, I examined the effects on consumer preference of three elements: (1) the provision of access to competitor information, (2) the level of decision ambiguity, and (3) the firm's objective market position. In a simulated online shopping environment, subjects were asked to shop for four Mexican beach vacation packages (destinations are Cancun, Cozumel, Mazatlán, and Puerto Vallarta) at two competing online travel agents. After providing informed consent (Appendix H) and reading a description of the task (Appendix I), subjects searched for information about the first of the four destinations at both travel agents, Fiesta Vacations and Holiday Tours, and were asked to choose their most preferred alternative before proceeding to the next destination. While the order in which subjects initially accessed each travel agent was pre-determined, subjects were able to return to either (or both) travel agent sites to re-evaluate the travel packages offered for a particular destination before making their final selection. The experimental design for this study is provided in Table 4.

Table 4: Experimental Design (Study 4)

Variable	*Levels*	*Type of Manipulation*	*Purpose*
Provision of Access to Competitor Information	Low or High	Within-subject	Hypotheses testing
Objective Market Position	Unfavorable, Moderate, or Favorable	Between-subjects	Hypotheses testing
Decision Ambiguity	Low or High	Between-subjects	Hypotheses testing
Order in which subjects were exposed to the comparative outcomes	*PA-yes* price best first or *PA-yes* price best last	Between-subjects	Counterbalance the potential effects
Order in which travel agents were listed and accessed	*PA-yes* first or *PA-yes* last	Between-subjects	Counterbalance the potential effects

The *provision of access to competitor information* was manipulated in the following manner. In the *PA-no* condition, subjects were provided with information pertaining only to its vacation packages. These packages were described on the following key attributes: (1) the category of the accommodation[5], (2) the accommodation's distance from the beach, (3) mode of transportation, (4) the price of the all-inclusive package, and (5) the facilities available. In the *PA-yes* condition, the travel agent provided the information about its own vacation packages as well as those of its five competitors in the marketplace (including those of the *PA-no* travel agent).

Decision ambiguity was manipulated in the following manner. First, the degree of specificity used to describe the type of accommodation and the hotel's distance from the beach was varied across conditions in order to manipulate the degree of comparability of the attributes. In the *low-ambiguity* condition, all accommodations across competitors were described in terms of a standardized, industry-wide rating system. This was used to ensure that the quality of the accommodations were comparable across the competing travel agents. In addition, the distance to the beach was described using an identical phrase for each competitor. In the *high-ambiguity* condition, the accommodation category is described as ratings that are established by individual travel agents and so, are not directly comparable across competitors. The distance to the beach was described using similar, but not identical, phrases that suggested a location close to the beach.

In order to mitigate the potential effects of inferences in relation to quality attributes, all stimulus materials used were extensively pre-tested. It should be noted that information about quality attributes was included in the design for two reasons. First, in

[5] Each of the 24 vacation packages (4 destinations x 6 travel agents) is unique in that, for a given destination, no two travel agents offer packages that include the same accommodation.

order to manipulate decision ambiguity relating to the non-comparability of attributes, features other than merely price were necessary in the product descriptions. Secondly, results from Studies 1 and 2 indicated that trust may not have been an important decision making criteria when the only differentiating factor was the prices charged.

Pretests were conducted in order to determine the actual levels used to describe the accommodation category and distance to the beach and to ensure that these labels were perceived as equally attractive in both the *low-* and *high-ambiguity* conditions. For the accommodation category, 12 similar words were pre-tested. Subjects were asked to rate, on a scale from 1 (*low*) to 9 (*high*), the quality of each accommodation based on its descriptor. Of these, the six most similar (i.e., those with the closest, but not necessarily the highest, mean rating) were used in the main study. Of these six, the two most similar terms were used to describe the *PA-yes* and *PA-no* travel agents' accommodations. A similar pretest was conducted to determine the actual levels for the accommodation's distance to the beach. Subjects were asked to separately rate how good the accommodations' distance to the beach would be on a scale from 1 (*bad*) to 9 (*good*). Once again, 12 similar phrases were tested and the six most similar were used for the main study.

In addition to attribute comparability, another facet of decision ambiguity manipulated in this study related to the degree of missing information relevant to the decision process. This was done by varying the availability of information about the various facilities available at each resort. For the two focal travel agents (i.e., the *PA-yes* and *PA-no* agents), information about the facilities was always listed. Furthermore, while this information was identical and available for all travel agents in the *low-ambiguity*

condition, it varied between the two focal agents and was unavailable from the other competitors in the *high-ambiguity* condition.

Sample search results pages for the *PA-yes* travel agent under conditions of *low* and *high* decision ambiguity can be found in Appendices J and K. In the *PA-no* condition, only the top portion of this information was available. Table 5 provides the details of the manipulation of ambiguity. The four competitors not directly evaluated by the participants, but that are included in the *PA-yes* search results page, are denoted by C1 to C4.

Table 5: Manipulation of Decision Ambiguity (Study 3)

Low Ambiguity	*High Ambiguity*					
All competitors	*PA-yes*	*PA-no*	*C1*	*C2*	*C3*	*C4*
Manipulation of Ambiguity-Accommodation Category						
moderate	intermediate	customary	moderate	standard	traditional	medium
described as standardized, industry-wide rating system	described as ratings that are set by the individual travel agents					
Manipulation of Ambiguity-Distance from the Beach						
by the beach	near the beach	close to the beach	a block from the beach	by the beach	within walking distance of the beach	a short walk to the beach
Manipulation of Ambiguity-Facilities Description						
restaurant, tennis, gift shop and mini-mart	recreation activities, bar, gift shop, and parking	water sports, lounge, mini-mart, and laundry	n/a	n/a	n/a	n/a

The resort pictures used were selected as follows. Five judges were given 16 pictures of resorts and asked to create 8 pairs of pictures based on the similarity of the pictures. The judges then ranked these pairs from the most to the least similar. Given the

high consistency across judges in the pairing task, six of the eight pairs were selected for the next phase of the pretest. In the second phase, 31 participants were asked to respond to the following question, "Based only on the two pictures above, how similar do you think these Mexican beach hotels look?," for each of the six pairs, on a scale from 1 (*very dissimilar*) to 9 (*very similar*). The four pairs with the highest mean responses were chosen for the main study. All four means were significantly greater than the midpoint of the scale.

Objective market position was manipulated by varying the price of the vacation package. The objective market position of the *PA-no* travel agent was anchored on the *average* attractiveness of firms in the marketplace as a whole. The price of the packages offered by the *PA-yes* travel agent varied so that it was worse than, equal to, or better than the *PA-no* travel agent on average across the four shopping trips. Three different levels of price differences were pre-tested ($20, $30, and $40), and results indicated that subjects perceived significant differences in objective market position when the difference in price between competing offers was $30. Therefore, a $30 price difference was used in establishing pricing across the various vacation packages. In terms of price, the five competing travel agents were equally attractive across the four destinations, on average.

The *order in which subjects were exposed to the different comparative outcomes* was counterbalanced to account for potential differences in consumers' perception resulting from exposure to unfavorable comparisons for the focal retailer first versus situations where the initial comparison is favorable. In one condition, the initial comparison between the *PA-yes* and the *PA-no* travel agent revealed a lower price at the

PA-yes travel agent while in the other condition, the *PA-no* travel agent offered the lowest price. Table 6 provides the levels of the objective market position manipulation across both price order conditions.

Table 6: Manipulation of the Objective Market Position of the *PA-yes* Travel Agent (Study 3)

Price Order Condition 1								
	PA-yes			*PA-no*	*C1*	*C2*	*C3*	*C4*
Dest.	*Unfavorable*	*Moderate*	*Favorable*					
Cancun	$879	**$849**	**$849**	$879	**$849**	$879	$879	**$849**
Cozumel	$949	$949	**$919**	**$919**	**$919**	**$919**	$949	$949
Mazatlán	$769	**$739**	**$739**	$769	$769	**$739**	**$739**	$769
Puerto Vallarta	$789	$789	**$759**	**$759**	$789	$789	**$759**	**$759**
Avg.	*$346.5*	*$831.5*	*$816.15*	*$831.5*	*$831.5*	*$831.5*	*$831.5*	*$831.5*
Price Order Condition 2								
	PA-yes			*PA-no*	*C1*	*C2*	*C3*	*C4*
Dest.	*Unfavorable*	*Moderate*	*Favorable*					
Cancun	$879	$879	**$849**	**$849**	$879	$879	**$849**	**$849**
Cozumel	$949	**$919**	**$919**	$949	$949	**$919**	**$919**	$949
Mazatlán	$769	$769	**$739**	**$739**	**$739**	**$739**	$769	$769
Puerto Vallarta	$789	**$759**	**$759**	$789	**$759**	$789	$789	**$759**
Avg.	*$346.5*	*$831.5*	*$816.15*	*$831.5*	*$831.5*	*$831.5*	*$831.5*	*$831.5*
Bold indicates lowest available price								

Finally, *the order in which travel agents were listed and accessed* was counterbalanced such that in one condition Fiesta Vacations provided access to competitor information and in the other, Holiday Tours provided such access. The travel agents were listed alphabetically. The resort names and pictures, as well as (in the *high-ambiguity* condition) the accommodation and distance-to-beach labels used to describe each alternative, were simultaneously counterbalanced with the order in which the travel agents were listed.

After shopping for four vacation packages across the two competing travel agents (and selecting an alternative for each of the four destinations), subjects were asked to

indicate their preference for each of the two travel agents separately, and relative to each other. They were also asked to choose from which of the two travel agents they would want to receive the discount coupon for their next travel purchase, and to indicate the relative strength of their preference. This measure was tied directly to the lottery incentive (described in Appendix I). The time subjects spent viewing each information page was also systematically recorded. The rating-scale measures of perceived trustworthiness described in the previous chapter were also collected to test the predicted effect, including the role of perceived trustworthiness as a mediator in the relationship between the three manipulated variables and the measures of consumer preference.

A pilot study was conducted to test the functionality of the computer program and the effectiveness of the experimental manipulations. Eighty-three undergraduate students participated in the pilot study for partial course credit and a lottery incentive. For the main study, 207 undergraduate business students were randomly assigned to one of the 24 between-subjects conditions[6]. As in the pilot study, subjects participated for partial course credit and a lottery incentive.

4.2: Results – Study 3

Manipulation Checks

Manipulation checks for the three independent variables of interest indicated that the manipulations were successful. For the manipulation of the provision of access, subjects responded to the question, "Based on the information provided to you by Fiesta Vacations (or Holiday Tours), how would you rate this travel agent on its willingness to

[6] Only six of these conditions, the level of ambiguity (2) x objective market position (3), related to the variables of interest in the hypothesized model. The remaining conditions were the result of the two control variables.

allow customers to view its competitor's vacation packages?" for both the *PA-yes* and *PA-no* travel agent. A repeated measures ANOVA revealed that the mean responses for the *PA-yes* ($M = 8.21$) versus *PA-no* ($M = 2.56$) travel agents on a scale from 1 (*bad*) to 9 (*good*) were significantly different from each other in the expected direction ($F_{1,183} = 772.21$, $p < 0.001$).

For the manipulation of objective market position of the *PA-yes* travel agent, subjects were asked to respond to the question, "Overall, how would you rate this travel agent, in relation to its competitors, in terms of the prices it charges?" Multiple measures were obtained using four bipolar nine-point rating scales. These scales were anchored *bad-good*, *uncompetitive-competitive*, *unreasonable-reasonable*, and *unattractive-attractive*. Given the high reliability of these four measures (Cronbach's $\alpha = 0.94$), a participant's average rating over the four measures, with higher values corresponding to greater objective market position, was used as a compound measure. The mean responses for the *unfavorable* ($M = 6.46$), *moderate* ($M = 6.87$), and *favorable* ($M = 7.69$) market position all vary significantly from each other and in the expected direction ($F_{2,183} = 21.02$, $p < 0.001$). Based on planned contrasts tests, all pair-wise mean differences for objective market position are significant at $p < 0.001$. Therefore, I conclude that the manipulation was successful.

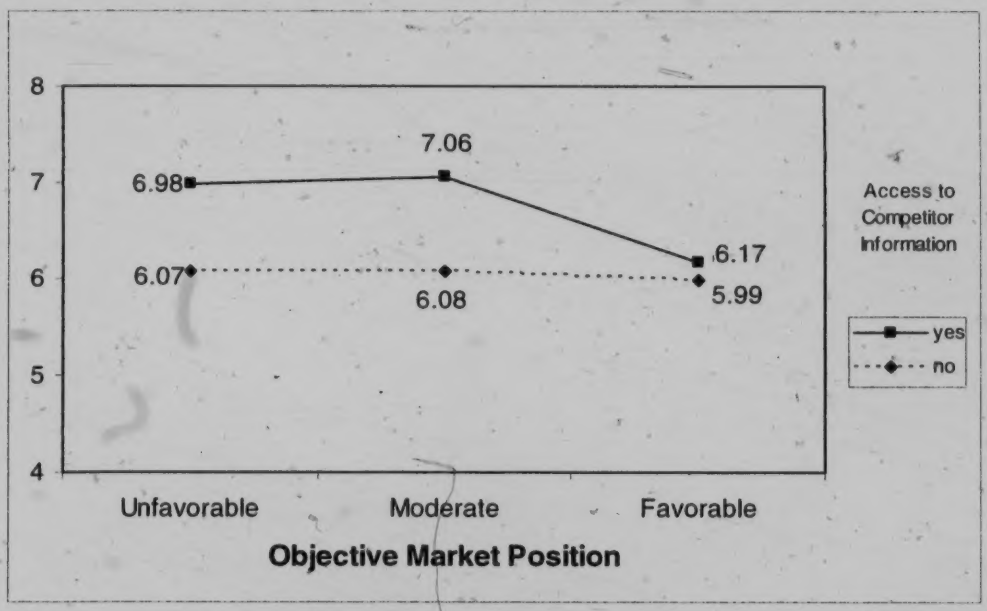
For the manipulation of decision ambiguity, subjects were asked to respond to the question, "Based on the information made available by all competitors in the marketplace that you just evaluated, how easy was it to compare the complete vacation packages offered across competitors?" on a scale from 1 (*bad*) to 9 (*good*). An ANOVA indicated that the mean responses for the *high-* ($M = 5.95$) versus *low-* ($M = 6.52$) *ambiguity*

conditions were significantly different in the expected direction ($F_{1,183} = 4.26$, $p < 0.05$), thus the manipulation of decision ambiguity was successful.

Perceived Trustworthiness

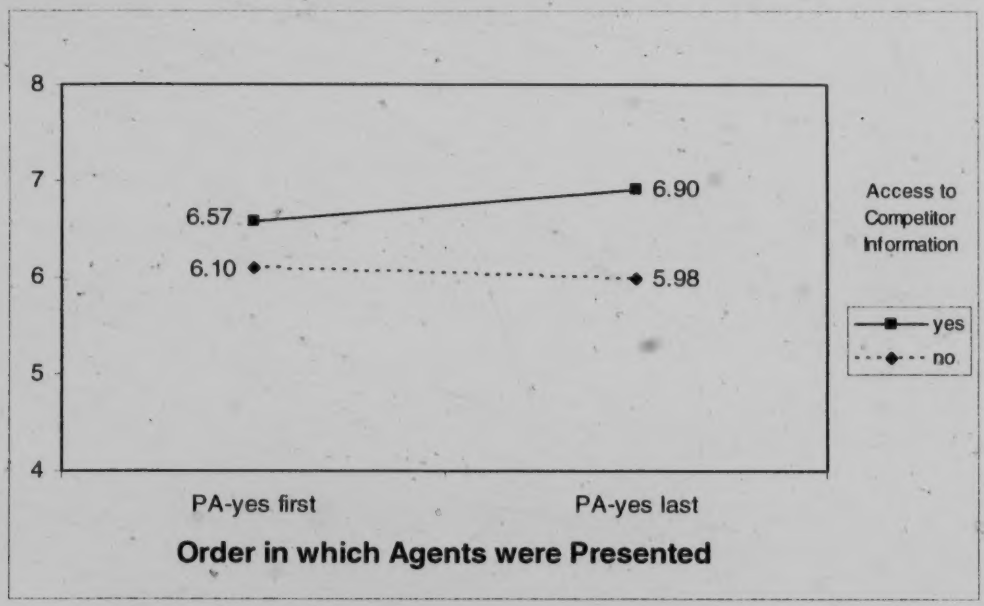
Hypothesized Effects: My prediction has been that providing access to competitor information enhances the perceived trustworthiness of the firm (see H_1). The latter was measured using the same five-point scale measure as Studies 1 and 2. Given the high reliability of the five measures (Cronbach's $\alpha = 0.94$ for both the *PA-yes* and the *PA-no* measures), a participant's average ratings over the five items for both travel agents were used as compound measures. As predicted by H_1, providing access to competitor information had a significant positive effect on the perceived trustworthiness of the focal retailer. The mean responses for the *PA-yes* ($M = 6.73$) and the *PA-no* ($M = 6.04$) conditions differed significantly from each other in the expected direction ($F_{1,183} = 67.89$, $p < 0.001$). Consistent with H_4, the interaction effect between the provision of access to competitor information and objective market position on perceived trustworthiness is also significant ($F_{2,183} = 8.99$, $p < 0.01$). While providing access to competitor information had a very strong positive impact on perceived trustworthiness when the retailer's objective market position was either *unfavorable* ($t_{67} = 4.78$, $p < 0.001$) or *moderate* ($t_{68} = 6.13$, $p < 0.001$), this effect was only marginally significant for the objectively superior firm ($t_{69} = 1.88$, $p = 0.064$) (see Figure 9).

Figure 9: Perceived Trustworthiness of the *PA-yes* and *PA-no* Travel Agents (Study 3)



Other Effects: No other significant main effects of the variables in the model were found. However, one significant higher order interaction effect is worth noting. Results indicate a significant interaction between the provision of access to competitor information and the order in which the travel agents were presented ($F_{1,183} = 7.25$, $p < 0.01$). As shown in Figure 10, both the *PA-yes* and the *PA-no* travel agents were perceived as more trustworthy when they were viewed last in the set of two agents. Subjects saw a greater difference between the two travel agents when the *PA-yes* agent was presented last.

Figure 10: Perceived Trustworthiness of the *PA-yes* and *PA-no* Travel Agents by Agent Order (Study 3)



This apparent recency effect may have resulted from differences in subjects' reference points across order conditions. That is, subjects may have used the agent presented first as a reference point from which they evaluated further information. When the *PA-no* agent was presented first, it may have been perceived as consistent with the norm that firms typically do not supply competitor information. Therefore, in comparison to this norm, the *PA-yes* seems even more trustworthy than it would if it set the standard by being presented first.

In sum, the results strongly support the hypothesis that the provision of access to uncensored competitor information has a positive influence on perceived trustworthiness, and that this effect is moderated by the objective market position of the firm. Furthermore, the order in which subjects are exposed to vendors in the marketplace seems to have a significant influence on the formation of trust which may be explained by a benchmarking effect.

Preference

Several main effects with respect to consumer preference have been hypothesized. First, preference for the firm is expected to be greater when the firm provides access to uncensored competitor information than when it does not (H_2). Second, the level of perceived trustworthiness of the focal firm will also have an effect on consumer preference (H_3), suggesting the possibility that the impact of providing access to competitor information on preference may be mediated by the firm's level of perceived trustworthiness. For each measure of preference, the moderating roles of objective market position (H_4) and decision ambiguity (H_6) were examined. Preference for the firm was measured in terms of participants' stated likelihood of choosing the travel agent for their next vacation package purchase, their relative preference for the two firms they were asked to evaluate, and several measures of choice that also involved indicators of strength of preference.

Stated Preference: In terms of the likelihood-based measure, subjects responded on two rating scales from 1 (*not likely*) to 9 (*very likely*) to the question, "If you were to purchase your next vacation package from an online travel agent, how likely would you be to purchase from Fiesta Vacations (or Holiday Tours)?" for both the *PA-yes* and the *PA-no* travel agents. For this analysis, a repeated measures ANOVA was run that included the full effects of: (1) the provision of access to competitor information (within-subject), (2) the level of decision ambiguity, (3) the objective market position of the *PA-yes* travel agent, (4) the order in which subjects were exposed to the comparative outcomes, and (5) the order in which travel agents were displayed and accessed.

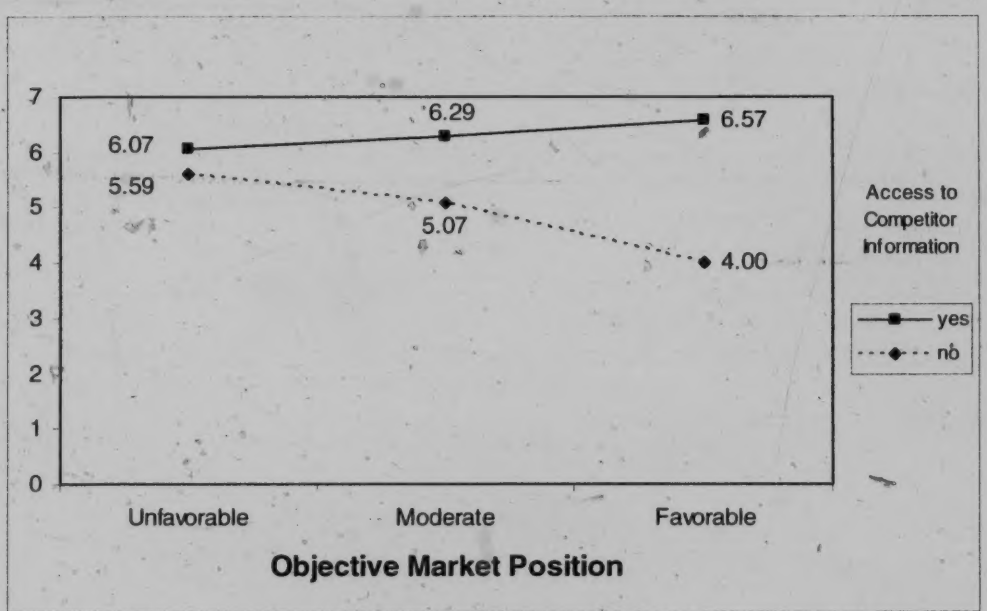
Consistent with H_2, subjects' stated preference for a travel agent was affected by whether or not it provided access to competitor information. The mean response for the *PA-yes* ($M = 6.31$) versus the *PA-no* ($M = 4.88$) travel agent was significantly different in the expected direction ($F_{1,183} = 42.95$, $p < 0.001$). Including the *PA-yes* agent's perceived trustworthiness measure in the model reveals that, as predicted in H_3, this construct had a positive effect on stated preference ($F_{1,182} = 11.69$, $p < 0.001$). Furthermore, when accounting for variability in perceived trustworthiness, the (additional) effect of providing access to competitor information is non-significant ($F_{1,182} = 2.83$, $p > 0.09$), suggesting the possibility of a mediating relationship.

Since software limitations did not allow for the direct removal of the within-subject variable for mediation analysis, the data were re-coded in the following manner in order to test for mediation. First, the provision of access variable was recoded as a between-subjects variable, but nested within each individual participant. As well, the objective market position was recoded in the following manner: *PA-yes* was worse than average (-1), *PA-yes* was equal to average (0), and *PA-yes* was better than average (+1). Since the objective market position of the *PA-no* travel agent was always equal to average, it was coded as (0) across all conditions. The model tested the effects of the same five variables from the repeated measures test previously discussed. When the level of perceived trustworthiness is added to this model, its effect on stated preference was highly significant ($F_{1,387} = 17.38$, $p < 0.001$), but the main effect of providing access also remains significant ($F_{2,387} = 21.34$, $p < 0.001$), indicating that the provision of access to competitor information had an effect on subjects' stated preference over and above that which is mediated by perceived trustworthiness. This finding is consistent with the

proposed model that suggests that there is also an informational effect of the provision of access to competitor information on preference, which is mediated by the amount of external information search. In this case, the benefits supplied to subjects as a result of the *PA-yes* agent providing complete market information had a direct and positive effect on their preference for that agent because they did not have to engage in any external information gathering to make a decision.

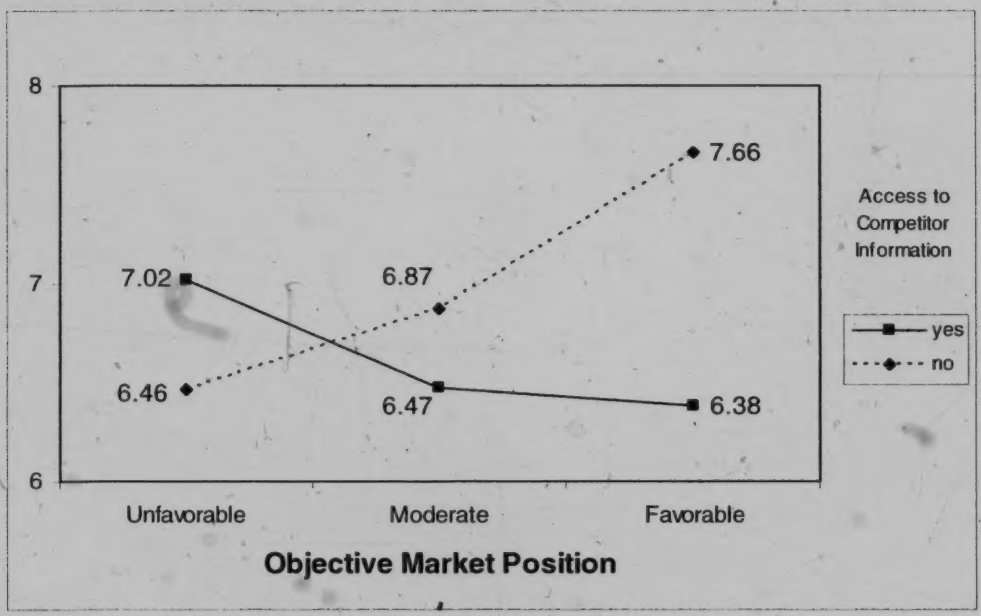
The results of the repeated measures ANOVA suggest that, in addition to a highly significant main effect of objective market position on consumers' stated preference ($F_{2,183} = 4.99$, $p < 0.01$), there was a significant interaction between this variable and the provision of access to competitor information ($F_{2,183} = 7.79$, $p < 0.001$). As the objective market position of the *PA-yes* travel agent becomes more favorable, the effect of providing access to competitor information on preference also increases (see Figure 11).

Figure 11: Stated Preference for the *PA-yes* and *PA-no* Travel Agents (Study 3)



At first glance, this effect would appear to be inconsistent with H_4, which predicted the greatest effect of providing access on preference to occur at a moderate level of objective market position. However, this result could be explained by the differences in how well subjects were able to ascertain the objective market position across the three manipulated levels (i.e., their perception of this construct). Subjects' perceptions of market position for the two travel agents are provided in Figure 12.

Figure 12: Perceived Market Position of the *PA-yes* and *PA-no* Travel Agents (Study 3)



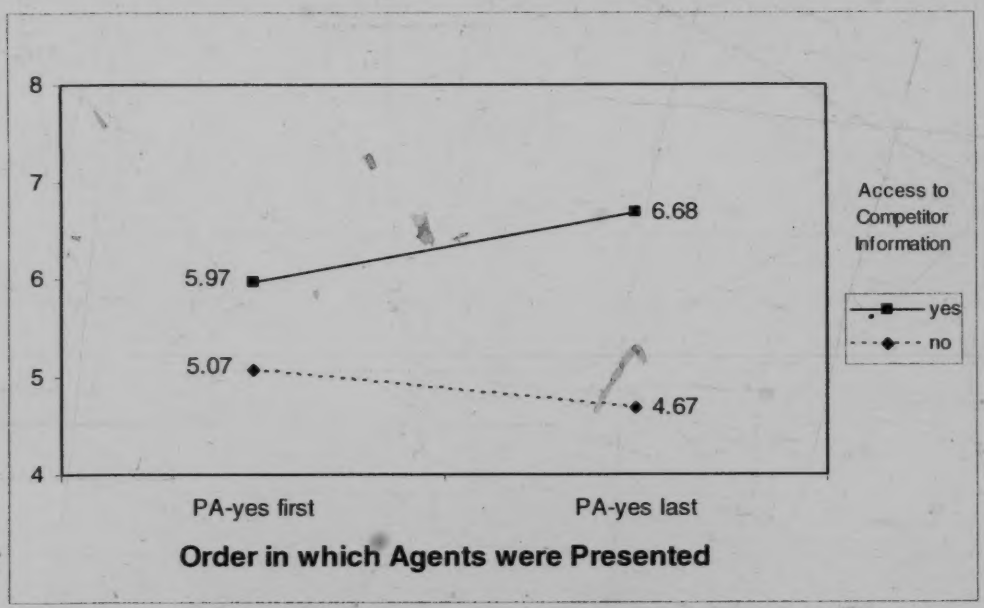
When the focal travel agent's objective market position was either *unfavorable* or *moderate*, subjects' perceptions of the magnitude of the difference between the two travel agents were much less than those in the *favorable* conditions. This implies that subjects in this condition saw the *PA-yes* agent as substantially more favorable than the *PA-no* agent than subjects in the *unfavorable* condition saw the *PA-no* agent as more favorable than the *PA-yes* agent, although objectively they are equally different. This also provides

rationale as to why the preference for the *PA-no* agent in the *favorable* condition was so much lower than the other two conditions. To test this explanation, a difference score for perceived market position (i.e., the perceived market position of the *PA-yes* minus the *PA-no* travel agents) was added to the model as a covariate. As expected, its interaction with the provision of access to competitor information was highly significant ($F_{1,182} = 23.26$, $p < 0.001$). Furthermore, the interaction between objective market position and the provision of access was no longer significant ($F_{1,182} = 1.08$, $p > 0.34$), indicating that the level of perceived market position mediated the effects of objective market position on subjects' stated preference. Thus, H_4 is supported.

Results of the analysis for the stated preference measure reveal no significant interaction between the provision of access to competitor information and the level of ambiguity ($F_{1,182} = 0.14$, $p > 0.70$). Therefore, H_6 is not supported for this particular measure.

The interaction between the provision of access to competitor information and the order in which agents were presented also had a significant effect on subjects' stated preference ($F_{1,183} = 6.384$, $p < 0.05$). For both the *PA-yes* and *PA-no* travel agents, subjects preferred the agent more when presented last as opposed to first (Figure 13). Consistent with the effect of agent order on the level of perceived trustworthiness, the effect on stated preference was stronger for the *PA-yes* agent than for the *PA-no* agent.

Figure 13: Stated Preference for the *PA-yes* and *PA-no* Travel Agents by Agent Order (Study 3)



Relative Preference: For this measure, subjects were asked, "If you were to purchase a vacation package and you had to choose between Fiesta Vacations and Holiday Tours, which one would you be more likely to choose?" The scale was anchored by "*would definitely choose Fiesta Vacations*" and "*would definitely choose Holiday Tours*," counterbalanced to represent the *PA-yes* and *PA-no* travel agents. The nine-point scale values ranged from 4 to 4 with 0 as the midpoint. A one sample t-test confirmed that the overall mean response of 1.15 was significantly higher than zero ($t_{206} = 6.96$, $p < 0.001$). That is, subjects tended to prefer the *PA-yes* travel agent over the *PA-no* travel agent. In order to test for the effects of perceived trustworthiness on relative preference, an ANOVA model was run that included the effects of the four between-subjects variables, all corresponding interaction effects, and the difference score for perceived trustworthiness (i.e., the perceived trustworthiness of the *PA-yes* minus the *PA-no* travel agent). Results indicate a highly significant positive effect of perceived

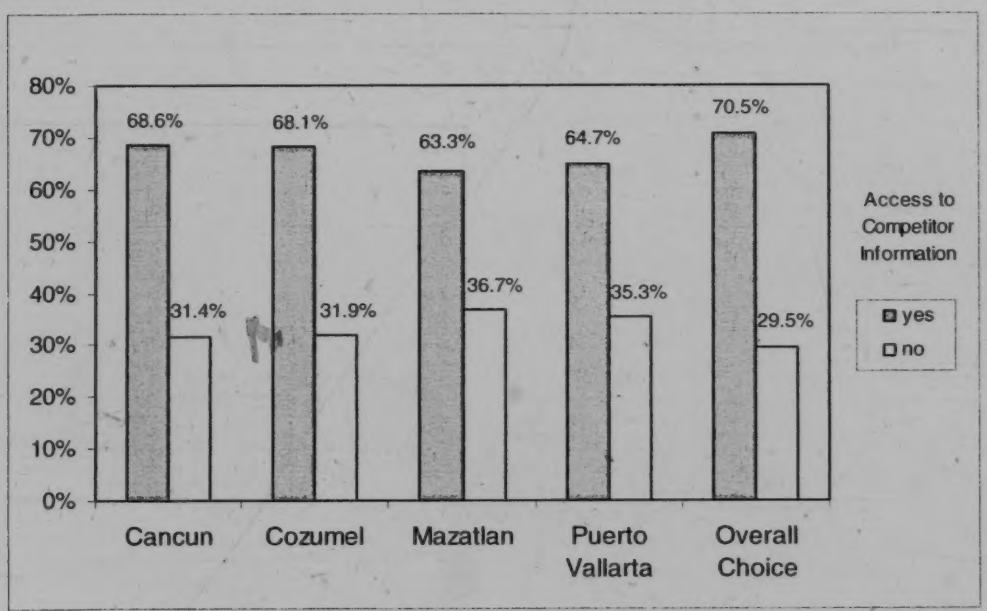
trustworthiness on relative preference ($\beta = 0.86$, t-value = 6.91, $p < 0.001$). Additional ANOVA models that tested for the interaction between the level of perceived trustworthiness and each of the moderating variables (i.e., the objective market position and the level of ambiguity) were run, but no significant relationships were found for this particular measure of preference. However, as expected, a positive main effect of objective market position on consumers' relative preference for the focal retailer was highly significant ($F_{2,182} = 22.97$, $p < 0.001$).

Destination-specific and overall agent choices: In terms of destination-specific choices, subjects were asked, "If you were to purchase a trip to (name of location), which of the two travel agents listed above would you purchase from?" for each of the four destinations searched. Subjects were also told that they could re-examine the information for either travel agent by clicking on the links provided by the experimenter before making their final selection, and their pattern of subsequent information search was recorded. In terms of the overall choice, subjects were asked upon completion of the information search stage, "Based on your evaluation of the two travel agents over the four separate vacation destinations that you examined, which travel agent would you prefer to win the discount coupon for your next travel purchase from?" This measure of preference was tied directly to the random draw described in Appendix I.

Choice shares, both for the destination-specific and the overall agent choices, also support a positive main effect of the provision of access to competitor information on preference. As shown in Figure 14, approximately twice as many subjects chose the *PA-yes* travel agent than chose the *PA-no* travel agent for both types of choice measures. Five separate binomial tests for each of the four destination choices and the overall agent

choice indicates that the percentage of subjects who chose the *PA-yes* travel agent is significantly larger than 0.5 ($p < 0.001$ in all five tests), supporting the hypothesis that the provision of access to competitor information had a significant main effect on the probability that subjects would choose the *PA-yes* travel agent over the *PA-no* travel agent.

Figure 14: Choice Shares of the *PA-yes* and *PA-no* Travel Agents (Study 3)



In order to test the effects of perceived trustworthiness on consumers' destination-specific choices, the data from the four choices were pooled across each individual respondent. The predictor variables used in this model included (1) the order in which the agents were presented, (2) the difference in perceived trustworthiness of the *PA-yes* versus the *PA-no* travel agents, (3) the level of decision ambiguity, and (4) the relative price position of the *PA-yes* versus the *PA-no* agent. This variable was created by combining the manipulation of price order with the specific destination for which the choice was being made. That is, for each of the four destinations examined, the price of

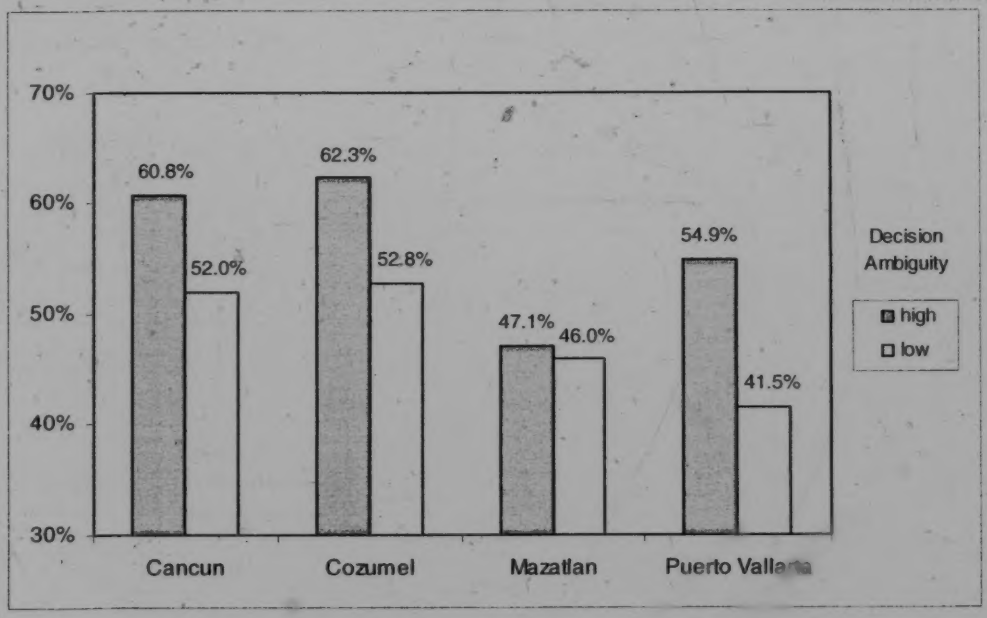
the *PA-yes* was systematically manipulated to be either better or worse than the *PA-no*. Results of a logistic regression analysis indicate that the level of perceived trustworthiness had a significant effect on destination-specific choices. As expected, larger differences in the levels of perceived trustworthiness of the *PA-yes* versus the *PA-no* travel agent ($\beta = 0.628$, Wald = 4.244, $p < 0.05$) significantly increased the probability of the *PA-yes* travel agent being selected. The results of the logistic regression model for overall agent choice are consistent with these findings. As expected, larger differences in the levels of perceived trustworthiness of the *PA-yes* versus the *PA-no* travel agent ($\beta = 1.321$, Wald = 24.565, $p < 0.001$) significantly increased the probability of the *PA-yes* travel agent being selected.

It's interesting to note that the difference in the beta weights between the destination-specific and the overall agent choice data indicate that the difference scores for perceived trustworthiness contributed less to the destination-specific choice models than it did in the overall agent choice. It appears that the magnitude of the effect of the level of perceived trustworthiness was greater in the overall agent choice than in any of the destination-specific choices, which is consistent with the theory of trust building over time with repeated interactions (Rousseau et al. 1998).

While neither the main effect of the level of decision ambiguity nor the interaction between ambiguity and trustworthiness were statistically significant, ambiguity did seem to influence consumer choices, especially when the *PA-no* travel agent offered a lower price than the *PA-yes* agent. Figure 15 shows the percentage of subjects choosing the *PA-yes* travel agent when the *PA-no* agent offered a lower price for each of the four destination-specific choices. On average, approximately 48% of subjects

in the *low-ambiguity* condition choose the *PA-yes* travel agent when the *PA-no* agent offered a better price. This average increased to approximately 57% in the *high-ambiguity* condition, indicating that in conditions under which ambiguity is high, consumers placed a greater importance on the level of perceived trustworthiness when making a purchase decision. While only marginally significant (Pearson's $\lambda^2 = 2.78$, $p = 0.09$), there appears to be a relationship between the level of decision ambiguity and the proportion of subjects choosing the *PA-yes* travel agent.

Figure 15: Choice Shares of the *PA-yes* Travel Agent when the *PA-no* Travel Agent was Objectively Superior (Study 3)



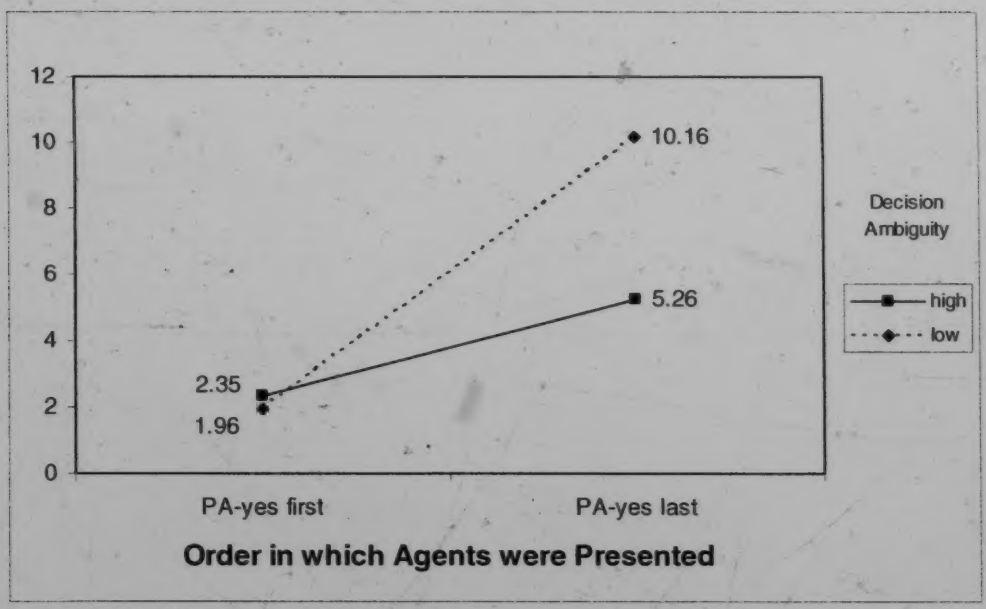
Relative strength of overall preference: Subjects were also tested on the relative strength of their overall preference by responding to the following question: "How many percentage points of additional discount would the travel agent you did not select have to offer you to make it equally attractive to the one you did select?" On average, subjects indicated they would need an additional discount of 4.84% from the *PA-no* travel agent in

order to be indifferent between the *PA-yes* and *PA-no* travel agents. A one sample t-test confirms this is significantly greater than zero ($t_{206} = 5.03$, $p < 0.001$).

An ANOVA also reveals a highly significant effect of the difference in the level of perceived trustworthiness of the *PA-yes* versus the *PA-no* agent on subjects' relative strength of preference ($F_{1,190} = 64.71$, $p < 0.001$). That is, the more positive the difference score is, the stronger the preference for the *PA-yes* travel agent.

The relative strength of overall preference was also influenced by a significant interaction between the order in which agents were presented and the level of decision ambiguity ($F_{1,190} = 3.90$, $p < 0.05$). When presented first, the *PA-yes* agent was slightly more preferred than the *PA-no* agent, regardless of the level of ambiguity. However, when presented last, the strength of subjects' preference for *PA-yes* agent was much stronger when ambiguity was low than when it was high. Thus it would appear that the effects predicted by H_6 do occur, but only when the *PA-yes* travel agent is presented after the *PA-no* agent. (see Figure 16).

Figure 16: Relative Strength of Overall Preference for the *PA-yes* Travel Agent (Study 3)



The order in which price information was presented also had a significant main effect on the relative strength of preference ($F1,190 = 9.08$, $p < 0.01$). Subjects preferred the *PA-yes* agent more when the initial price comparison favored the *PA-yes* travel agent ($M = 7.69$) as opposed to conditions under which the initial comparison favored the *PA-no* travel agent ($M = 1.85$). This finding is consistent with the propositions of Crowley and Hoyer (1994) who argue that negative information should be placed early in a persuasive message, but not at the beginning of the message.

Process measures: The following process measures were also collected. First, the time (in seconds) spent viewing each page of information was recorded for both the *PA-yes* and the *PA-no* travel agents, in terms of both the initial exposure to information, as well as any (optional) re-examination. In addition to the time spent viewing each agent, the number of times subjects re-examined each travel agent's website, across the four destinations, was also recorded.

Table 7 provides an overview of the time measures for each travel agent. Two separate analyses were run that tested the effects on (1) the initial time spent viewing, averaged across the four destinations, and (2) the time spent re-examining information, averaged across the four destinations. In both cases, the repeated measures ANOVA model tested the full effects of the following predictors: (1) the provision of access to competitor information, (2) the level of decision ambiguity, (3) the objective market position of the *PA-yes* travel agent, (4) the order in which subjects were exposed to comparative outcomes, and (5) the order in which travel agents were listed and accessed. The models also included the difference scores for the level of perceived trustworthiness as a covariate.

Table 7: Time (in seconds) Spent Viewing Travel Agents on Initial Visit and (Optional) Re-examination (Study 3) [7]

	PA-yes			*PA-no*		
Destination	*Initial*	*Re-examined*	*Total*	*Initial*	*Re-examined*	*Total*
Cancun	56.12	8.34	64.46	22.57	5.33	27.90
Cozumel	27.96	2.98	30.94	12.63	1.60	14.23
Mazatlán	22.77	2.50	25.27	10.71	1.75	12.46
Puerto Vallarta	17.75	2.42	20.17	9.29	1.48	10.77
Avg.	31.15	4.06	35.21	13.80	2.54	16.34

The provision of access to competitor information had a significant effect on both the amount of time that subjects spent initially viewing the information ($F_{1,182} = 599.52$, $p < 0.001$) and on the amount of time spent re-examining the information during (optional) re-visits ($F_{1,182} = 17.92$, $p < 0.001$). However, these effects do not appear to be mediated by the level of perceived trustworthiness. When added as a covariate in the

[7] GLM analysis reveals that the time spent viewing information for the *PA-yes* versus *PA-no* agents, for both the individual destinations and averaged across the four searches, indicate that all differences are significant at $p < 0.05$.

model, the difference scores for the level of perceived trustworthiness did not significantly affect either the initial time spent viewing ($F_{1,182} = 0.78$, $p > 0.30$) or the time spent re-examining information ($F_{1,182} = 0.42$, $p > 0.50$). It appears that subjects spent more time viewing information from the *PA-yes* travel agent simply because more of it was available to view.

Analysis also reveals a significant main effect of ambiguity on both the average time spent viewing on the initial visit ($F_{1,182} = 5.55$, $p < 0.05$) and on the average time spent re-examining the information ($F_{1,182} = 3.92$, $p < 0.05$). For both measures, subjects spent more time viewing information when ambiguity was high rather than low.

These results also reveal a significant interaction between the provision of access to competitor information and the level of decision ambiguity in terms of the average time spent viewing information on subjects' initial visits ($F_{1,182} = 7.73$, $p < 0.01$). However, this effect does not appear to be driven by perceived trustworthiness. The interaction between perceived trustworthiness and ambiguity is not significant ($F_{1,181} = 1.26$, $p > 0.20$). It appears that the difference in time spent viewing was based purely on the informational effects of the ambiguous information. That is, subjects took longer to view the *PA-yes* information simply because there was more of it. The difference was further enhanced by ambiguity because ambiguous information made it more difficult to compare alternatives. The interaction between the provision of access and the level of ambiguity shown in the average time spent viewing is driven by the response times for the first and third destination search, as this interaction effect is non-significant in searches 2 and 4. The mean responses for each destination, broken down by ambiguity, are shown in Table 8.

Table 8: Time (in seconds) Spent Viewing Travel Agents on Initial Visit by Level of Ambiguity (Study 3)

	PA-yes			*PA-no*		
	High Ambiguity	*Low Ambiguity*	*ANOVA Simple Effects*	*High Ambiguity*	*Low Ambiguity*	*ANOVA Simple Effects*
Cancun	61.64	50.54	$F_{1,183} = 12.71$, $p < 0.001$	22.95	22.19	$F_{1,183} = 0.15$, $p > 0.70$
Cozumel	28.85	27.06	$F_{1,183} = 0.67$, $p > 0.40$	12.99	12.26	$F_{1,183} = 0.46$, $p > 0.50$
Mazatlán	24.64	20.88	$F_{1,183} = 3.88$, $p < 0.05$	10.75	10.67	$F_{1,183} = 0.00$, $p > 0.90$
Puerto Vallarta	18.19	17.30	$F_{1,183} = 0.36$, $p > 0.50$	9.93	8.64	$F_{1,183} = 3.23$, $p > 0.07$

Agent order was also found to impact viewing times. The interaction between the provision of access to competitor information and the order in which agents were presented had a significant effect on both the initial time spent viewing information ($F_{1,182} = 27.70$, $p < 0.001$), and the time spent re-examining information ($F_{1,182} = 27.63$, $p < 0.001$). In both cases, subjects spent more time viewing information from either agent when it was presented first rather than last.

The provision of access to competitor information also affected the number of times that subjects chose to re-examine the two travel agents. In total, subjects re-examined the *PA-yes* agent's page approximately 1.69 times during the four destination searches, which was significantly greater than the 1.52 times for the *PA-no* travel agent ($F_{1,183} = 5.29$, $p < 0.05$). When added to the model as a covariate, the difference score for perceived trustworthiness significantly increased the mean number of times subjects chose to re-examine the information ($F_{1,182} = 4.60$, $p < 0.05$). Furthermore, when accounting for variability due to the level of perceived trustworthiness, the main effect of providing access to competitor information is no longer statistically significant ($F_{1,182} = 0.53$, $p > 0.46$) indicating that the effect of providing access on the number of

times subjects chose to re-examine information is mediated by the level of perceived trustworthiness.

The interaction between the provision of access to competitor information and the order in which information was initially presented on the number of times subjects chose to re-examine information across the four destinations is also significant ($F_{1,183} = 72.95$, $p < 0.001$). For both travel agents, subjects were more likely to re-examine the information if the agent was presented first. However, this effect was greater for the *PA-yes* agent than the *PA-no* agent.

4.3: Discussion – Study 3

Contrary to prediction, the data indicate that subjects did not use the market signal of firm trustworthiness (i.e., the act of providing access to competitor information) when forming preferences. It appears that they instead choose to ignore the ambiguous information and rely more on price information when making their decisions. As a result, high ambiguity resulted in slightly stronger preferences for the favorably positioned *PA-yes* agent, but weaker preferences for the unfavorably and moderately market positioned travel agents. However, if preferences were based solely on the market position of the *PA-yes* travel agent, one would anticipate a significant reduction in preference for the *PA-yes* agent in the *unfavorable* and *moderate* market position conditions. However, no significant interaction effects between market position and ambiguity were found for these measures of preference. One explanation as to the lack of effect of ambiguity may relate to its unanticipated impact on the initial development of trust. Because ambiguity was present on the initial exposure to the travel agents, the formation of trust may have

been inhibited to some extent. The overall effect of the level of ambiguity and its interaction with the provision of access to competitor information did not significantly affect the level of perceived trustworthiness. However, a closer examination of the data suggests that some significant differences across the conditions of objective market position do occur. Table 9 shows the mean responses for the level of perceived trustworthiness, broken down by objective market position and the level of ambiguity. Independent sample t-tests reveal two significant differences between the *high* versus *low* levels of ambiguity that could support the notion that trust may have been adversely influenced by high ambiguity. When the *PA-yes* agent was moderately positioned (and thus, expected to have the highest level of perceived trustworthiness), high ambiguity significantly lowered the level of perceived trustworthiness of the *PA-yes* travel agent. Furthermore, when the *PA-yes* agent was positioned as unfavorable (i.e., the *PA-no* agent was objectively superior), subjects perceived the *PA-no* travel agent as significantly more trustworthy when ambiguity was *high* than when it was *low*. These findings suggest that, in the conditions where higher levels of trust were anticipated, ambiguity suppressed the formation of trust in the initial stages. In the next study, this issue is addressed by allowing for the formation of trust at an initial search stage prior to introducing the manipulation of ambiguity at a subsequent stage.

Table 9 : Level of Perceived Trustworthiness by Objective Market Position and Level of Ambiguity (Study 3)

	PA-yes Travel Agent			*PA-no Travel Agent*		
	Level of Ambiguity			*Level of Ambiguity*		
Objective Market Position	*High*	*Low*	*ANOVA Simple Effects*	*High*	*Low*	*ANOVA Simple Effects*
Unfavorable	7.02	6.93	$F_{1,66} = 0.10$, $p > 0.70$	6.38	5.76	$F_{1,66} = 3.84$, $p = .054$
Moderate	6.74	7.38	$F_{1,67} = 6.10$, $p < 0.01$	5.99	6.16	$F_{1,67} = 0.31$, $p > 0.50$
Favorable	6.21	6.12	$F_{1,68} = 0.07$, $p > 0.70$	6.00	5.97	$F_{1,68} = 0.02$, $p > 0.90$

4.4: Method – Study 4

In this study, the effects of (1) the provision of access to competitor information, and (2) the level of decision ambiguity on consumer preferences were re-examined. After signing the consent form (Appendix L), subjects could log into the online experiment and read the description of the task (Appendix M). As in Study 3, subjects were asked to shop for four Mexican beach vacation packages (destinations are Cancun, Cozumel, Mazatlán, and Puerto Vallarta) at two competing online travel agents. After reading a description of the task, subjects searched for information about the first of the four destinations at both travel agents, Fiesta Vacations and Holiday Tours[8], and were asked to choose their most preferred alternative before proceeding to make their choice for the next destination. While the order in which subjects initially accessed each travel agent was pre-determined, subjects were able to return to either (or both) travel agent sites to re-evaluate the travel packages offered for a particular destination before making their final selection.

[8] Order effects were controlled for in the same manner as in Study 3.

In a 2^4 full-factorial mixed design, the provision of access was manipulated within-subject, where one of the two focal retailers provided access to competitor information (*PA-yes*) and one did not (*PA-no*). The between-subjects factor of central interest manipulated in this study was the level of decision ambiguity (*low* or *high*). As in Study 3, both the order in which subjects were exposed to the different comparative outcomes and the order in which the travel agents were listed and accessed were counterbalanced. Unlike Study 3, the objective market position was not manipulated, but rather was held constant at the moderate level. All stimulus materials were identical to those used in Study 3 with the following exceptions. During the initial search for information about Mexican beach destinations, the level of ambiguity was held constant at a low level. That is, for all competitors in the marketplace, identical phrases were used to describe the accommodation category, distance from the beach and the facilities available. The manipulation of ambiguity was introduced in a second, follow-up stage, after subjects were given the opportunity to gain experience shopping at both travel agent websites, and thus could form an opinion as to the travel agents' levels of trustworthiness. The manipulation of ambiguity was introduced after subjects completed the initial search and choice tasks related to the Mexican vacation packages. In the follow-up task, subjects were asked to make a series of four pair-wise choices for Cuban beach packages being offered by the *PA-yes* and the *PA-no* travel agents. In the *low-ambiguity* condition, both the *PA-yes* and *PA-no* travel agents offered vacation packages to the *identical* resort for each destination, and the packages were described to subjects in terms of all attributes made available in the initial search phase for Mexican beach resorts. The only differentiating factor was the prices charged by each travel agent, and these followed a

similar pattern as that of the initial learning phase. In the *high-ambiguity* condition, the *PA-yes* and *PA-no* travel agents offered packages to different Cuban resorts, and subjects were only given the name of the resort and the prices charged by each travel agent. This manipulation of ambiguity was intended to address both the completeness and the comparability aspects of the theoretical definition of decision ambiguity.

The procedure for the initial phase of this study was identical to that of the previous one. Subjects responded to questions related to both their individual destination choices and their overall travel agent choice based on the information provided about the Mexican beach resorts. Upon completion of this phase, subjects were asked to make another series of choices based on the information provided to them related to the Cuban destinations[9]. In a series of pair-wise choices, subjects chose a travel agent from which to purchase each of four Cuban vacation packages. Upon completion of this task, they were asked to (1) rate their preference for both the *PA-yes* and *PA-no* travel agents individually and relative to each other, and (2) make an overall choice of travel agent, based on both the information they obtained during the initial search for Mexican beach destinations and that obtained during their selection of Cuban vacation packages. The final measure of overall choice, and subsequent strength of choice measure, was tied directly to a lottery incentive.

4.5: Results – Study 4

As most measures used in this study were extensively pre-tested for Study 3, only a small pretest of the new ambiguity manipulation was undertaken prior to the main data

[9] Subjects did not re-visit the travel agents' websites to obtain this information but rather it was displayed in a series of pair-wise choices during the follow-up questionnaire.

collection. Results of this pretest indicated that the manipulation of ambiguity was successful. For the main study, one-hundred and fifty-five undergraduate business students participated in this study for partial course credit and a lottery incentive.

Manipulation Checks

For the manipulation of the provision of access to competitor information, subjects responded to the question, "Based on the information provided to you by Fiesta Vacations (or Holiday Tours), how would you rate this travel agent on its willingness to allow customers to view its competitor's vacation packages?" for both the *PA-yes* and *PA-no* travel agents. Repeated measures ANOVA indicated that the mean responses for the *PA-yes* ($M = 8.32$) versus the *PA-no* ($M = 2.19$) travel agent on a scale from 1 (*bad*) to 9 (*good*) were significantly different from each other in the expected direction ($F_{1,147} = 850.41$, $p < 0.001$), thus the manipulation was successful.

For the manipulation of the level of decision ambiguity, subjects were asked to respond to the question, "Based on the information provided to you by the experimenter about the *Cuban vacation packages* only, how easy was it to compare the features (e.g., the quality and location of the accommodations and the facilities available) of the *Cuban vacation packages* offered by each travel agent?" On a scale from 1 (*difficult to compare*) to 9 (*easy to compare*), the mean responses for the *high-* ($M = 4.33$) versus *low-* ($M = 7.03$) *ambiguity* conditions were significantly different in the expected direction ($F_{1,147} = 39.00$, $p < 0.001$), thus the manipulation was successful.

Perceived Trustworthiness

My prediction has been that providing access to competitor information enhances the perceived trustworthiness of the firm (see H_1). The latter was measured using the

same five bipolar nine-point rating scales for both the *PA-yes* and the *PA-no* travel agents that was used in previous studies. Given the high reliability of these five measure (Cronbach's $\alpha = 0.89$ for the *PA-yes* and $\alpha = 0.92$ for the *PA-no* measure), a participant's average ratings over the five items for both travel agents were used as compound measures.

A repeated measures ANOVA was used in order to test the effects of the provision of access to competitor information on the level of perceived trustworthiness of the two travel agents. A full model was run which included all main effects and interaction effects of (1) the provision of access to competitor information (within-subject), (2) the level of decision ambiguity, (3) the order in which agents were presented, and (4) the price order condition. As predicted, providing access to competitor information had a significant positive effect on the perceived trustworthiness of the travel agent. The mean responses for the *PA-yes* ($M = 7.16$) and the *PA-no* ($M = 6.22$) conditions differed significantly from each other in the expected direction ($F_{1,147} = 69.11$, $p < 0.001$), thus supporting H_1.

Preference

Measures of Preference: Multiple measures of consumer preference were collected in this study, both prior and subsequent to the manipulation of ambiguity. Prior to the manipulation of ambiguity, choice measures were obtained at both the individual destination level and at the level of overall (i.e., future) choice, as well as a measure of the strength of subjects' overall choice. In terms of individual destination choices, subjects were asked, "If you were to purchase a trip to (name of Mexican location), which of the two travel agents listed above would you purchase from?" Subjects were

also told that they could re-examine the information for either travel agent by clicking on the links before making their selection. In terms of the overall choice, subjects were asked upon completion of the information search stage, "Based on your evaluation of the two travel agents over the four separate vacation destinations that you examined, which travel agent would you most likely purchase your next vacation package from?" Subjects were also asked to indicate the relative strength of their overall choice by responding to the following question: "How many percentage points of additional discount would Fiesta Vacations (or Holiday Tours) have to offer you to make it equally attractive to Holiday Tours (or Fiesta Vacations)?"

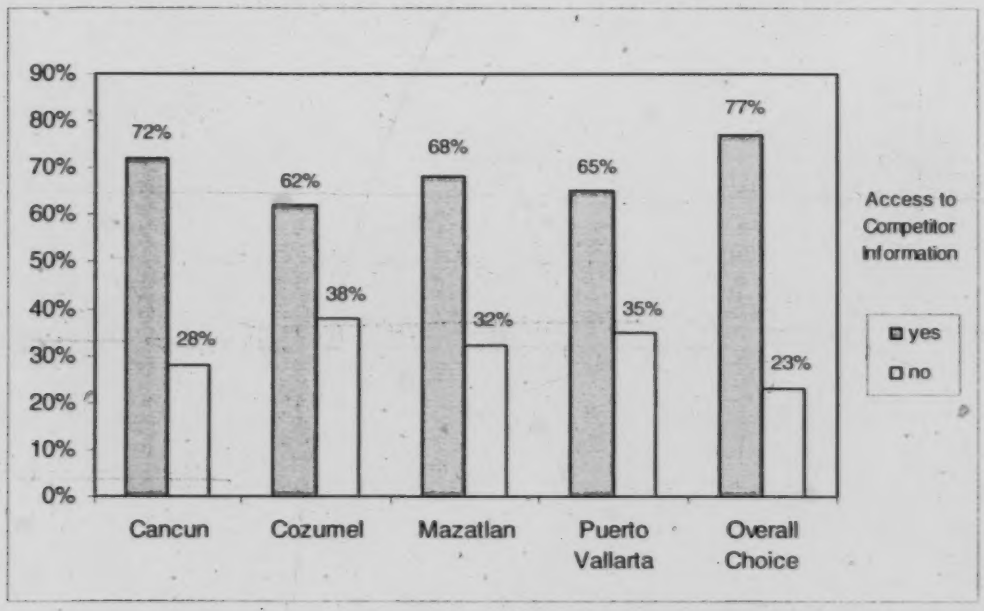
After completing the initial search phase of the experiment, several other measures of consumer preference were collected specifically to test the predicted moderating effect of decision ambiguity on the relationship between the provision of access and consumer preference. In a series of pair-wise choice tasks (during which the level of ambiguity was systematically manipulated), subjects were provided information on vacation packages currently being offered by the *PA-yes* and *PA-no* travel agents and asked to choose their most preferred option by clicking on the appropriate button below the package descriptions. They were also asked to respond, on two rating scales from 1 (*not likely*) to 9 (*very likely*), to the following questions, "If you were to purchase your next vacation package from an online travel agent, how likely would you be to purchase from Fiesta Vacations *(or* Holiday Tours*)*?" for both the *PA-yes* and *PA-no* travel agents. Another measure of preference required subjects to respond to a *relative* preference question. Subjects were asked, "If you were to purchase a vacation package and you had to choose between Fiesta Vacations and Holiday Tours, which one would you be more

likely to choose?" The scale was anchored by "*would definitely choose Fiesta Vacations*" and "*would definitely choose Holiday Tours*," counterbalanced to represent the *PA-yes* and *PA-no* travel agents. The nine-point scale values ranged from 4 to 4 with 0 as the midpoint. As a measure of overall choice, subjects were asked, "Based on your evaluation of the two travel agents during *both* your shopping trip *and* the information you were provided regarding the Cuban vacation packages, which travel agent would you prefer to win the discount coupon from?" Subjects were also asked to indicate the extent to which they preferred the travel agent they selected by responding to the following question: "How many percentage points of additional discount would Fiesta Vacations (or Holiday Tours) have to offer you to make it equally attractive to Holiday Tours (or Fiesta Vacations)?"

Hypothesized Effects on Preference – Search Phase: Choice shares for the Mexican destinations, both at the destination-specific level and the overall agent choice, support a positive main effect of the provision of access to competitor information on preference. As shown in Figure 17, approximately twice as many subjects chose the *PA-yes* travel agent than chose the *PA-no* travel agent in terms of both the destination-specific level data and the final overall choice measure. Five separate binomial tests for each of the four individual destination choices and the final overall choice indicates that the proportion of subjects who chose the *PA-yes* travel agent is significantly greater than 0.5 ($p < 0.001$ in four tests and $p < 0.01$ in one). Furthermore, the graded paired comparison scores for the overall choice shares revealed that subjects indicated they would need an additional discount of 7.81% from the *PA-no* travel agent in order to be indifferent between the *PA-yes* and the *PA-no* travel agents. A one sample t-test reveals

that the mean response of 7.81 is significantly greater than zero ($t_{154} = 6.37$, $p < 0.001$). Taken together, these results provide strong support for the hypothesis that the provision of access significantly increases the probability of subjects choosing the *PA-yes* travel agent and the subsequent strength of their choices. Thus, H_2 is supported.

Figure 17: Choice Shares of the *PA-yes* and *PA-no* Travel Agents – Mexico (Study 4)



In order to test the effects of perceived trustworthiness on consumers' individual choices during the initial search stage, the data from the four destination choices were pooled for each individual respondent to form a single measure of choice for each person. The predictor variables used in the model[10] included (1) the order in which the agents were presented, (2) the difference scores for perceived trustworthiness (i.e., the perceived trustworthiness of the *PA-yes* agent minus the scores for the *PA-no* travel agent), and (3) the relative price position of the *PA-yes* versus the *PA-no* agent. This variable was created by combining the manipulation of price order with the specific destination for

[10] As ambiguity was not manipulated until the follow-up stage, it was not included as a predictor in this model.

which the choice was being made. That is, for each of the four destinations examined, the price of the *PA-yes* was systematically manipulated to be either better or worse than the *PA-no*, even though their overall market position was identical when averaged across the four destinations. A logistic regression model, which included all main effects and interaction effects, was run. Results indicate that the difference scores for the level of perceived trustworthiness had a significant effect on destination-specific choices ($\beta = 0.47$, Wald = 6.64, $p < 0.01$). That is, greater differences in perceived trustworthiness of the *PA-yes* over the *PA-no* travel agent increased the probability of the *PA-yes* agent being chosen in the destination-specific choice tasks. No other variables in the model were found to significantly influence destination choices. The adjusted R^2 of this model is 0.250.

The results for the overall agent choice measure are consistent with these findings. The full logistic regression model was run, which included the main and interaction effects of (1) the order in which agents were presented, (2) the price order, and (3) the difference scores for perceived trustworthiness. Results indicate that the difference scores for the level of perceived trustworthiness had a significant effect on overall travel agent choice ($\beta = 1.74$, Wald = 5.62, $p < 0.05$). That is, greater differences in perceived trustworthiness for the *PA-yes* over the *PA-no* travel agent increased the probability of the *PA-yes* agent being chosen in the overall choice task. No other variables in the model were found to significantly influence overall agent choice. The adjusted R^2 is 0.324.

The extent to which subjects preferred the travel agent they selected based on information about Mexican destinations was measured by the graded paired comparison

scores. An ANOVA was run to test the effects of (1) the order in which agents were presented and (2) the price order, as well as the difference scores for perceived trustworthiness as a covariate. Consistent with the results from the choice data, the difference scores for the level of perceived trustworthiness had a significant positive effect on subjects' strength of their choices ($\beta = 5.71$, $t = 7.50$, $p < 0.001$).

Hypothesized Effects on Preference – Follow-up Phase: In this stage of the experiment, the manipulation of the level of decision ambiguity was introduced, and its effects on multiple measures of consumer preference were measured.

In terms of stated preference, a repeated measures ANOVA was run that included the main effects and interactions between (1) the provision of access to competitor information (within-subject), (2) the level of decision ambiguity, (3) the order in which agents were presented, and (4) the price order condition. Results indicated that subjects' mean responses to the stated preference measures for the *PA-yes* ($M = 6.23$) was significantly higher than that of the *PA-no* ($M = 4.95$) travel agent ($F_{1,147} = 41.87$, $p < 0.001$), thus supporting H_2.

To test the effects of perceived trustworthiness on consumers' stated preference (H_3), the difference score for perceived trustworthiness was added to the above model as a covariate. As expected, this variable had a significant positive effect on consumers' stated preference for the *PA-yes* travel agent ($\beta = 0.44$, $t = 4.98$, $p < 0.001$) and a significant negative effect on consumers' stated preference for the *PA-no* travel agent ($\beta = -0.55$, $t = -5.69$, $p < 0.001$). Furthermore, when the effects due to perceived trustworthiness are accounted for in the model, the main effect of the provision of access to competitor information is no longer statistically significant ($F_{1,146} = 3.15$, $p > 0.08$)

indicating that the effect of providing access to competitor information on consumer preference is mediated by the level of perceived trustworthiness.

While directional evidence suggests that subjects' stated preference ratings were higher for the *PA-yes* travel agent and lower for the *PA-no* travel agent when ambiguity was high rather than when it was low, the predicted interaction between the provision of access to competitor information and the level of decision ambiguity was not statistically significant. Therefore, the H_6 is not supported for this particular measure of consumer preference.

With respect to the relative measure of preference, scale values were such that a score of -4 indicated a strong preference for the *PA-no* agent while a score of +4 indicated a strong preference for the *PA-yes* agent. A one sample t-test indicated that the overall mean response of +1.29 was significantly greater than the scale midpoint of 0 ($t_{154} = 7.30$, $p < 0.001$), indicating an overall preference for the *PA-yes* travel agent.

The level of perceived trustworthiness was also found to have a significant positive effect on the relative preference measure. An ANOVA model that included the main effects of (1) the level of decision ambiguity, (2) the order in which travel agents were presented, (3) the price order condition, and (4) the difference score for perceived trustworthiness was run. As expected, the level of perceived trustworthiness had a significant positive effect on relative preference ($\beta = 0.85$, $t = 7.86$, $p < 0.001$), thus supporting H_3. The adjusted R^2 of this model is 0.307.

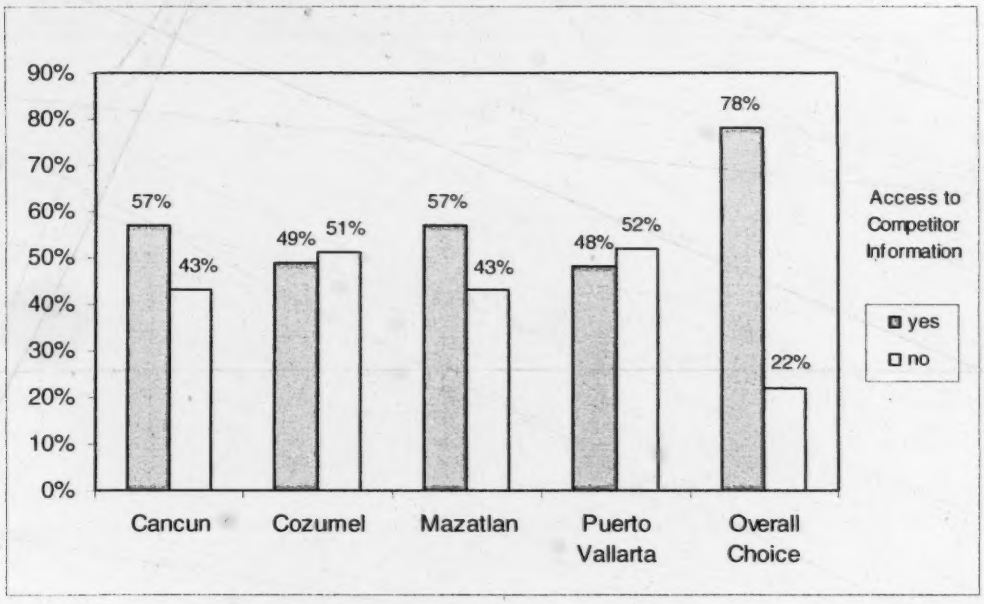
While directional evidence suggests that subjects' relative preference for the *PA-yes* travel agent was stronger when the level of ambiguity was high ($M = 1.49$) rather than

low ($M = 1.09$), this difference was not statistically significant and therefore H_6 is not supported for this particular measure of preference.

Examining the choice shares for both the destination-specific choices and the overall agent choice reveal some interesting differences in subjects' choice patterns between those choices made during the initial learning phase and those made during the follow-up task. Consistent with the initial overall firm choice task, the provision of access had a significant positive effect on the number of respondents who chose the *PA-yes* travel agent in the subsequent overall firm choice task. A binomial test revealed that the overall choice measure indicates that the percentage of subjects choosing the *PA-yes* travel agent (78%) is significantly greater than 50% ($p < 0.001$). The relative strength of this choice (i.e., graded paired comparison scores) revealed that subjects indicated they would need an additional discount of 7.61% from the *PA-no* travel agent in order to be indifferent between the *PA-yes* and the *PA-no* travel agents. A one sample t-test reveals that the mean response of 7.61 is significantly greater than zero ($t_{154} = 6.45$, $p < 0.001$).

However, results from the destination-specific choices indicate that the provision of access to competitor information did not significantly influence this set of choices (see Figure 18). All binomial tests for the destination-specific choice data are non-significant in that the proportion of subjects choosing the *PA-yes* travel agent did not significantly differ from 0.50.

Figure 18: Choice Shares of the *PA-yes* and *PA-no* Travel Agents – Cuba (Study 4)



One possible explanation of this result is that the effects of providing access to comparative information on consumer preference are situational and so, when consumers make decisions in the absence of such information, the effects are not sustainable. However, this would not account for the significant effect of this variable on subjects' overall firm choice during the follow-up phase. It is more likely that the destination-specific choices were driven by the information contained in the pair-wise comparison, especially the relative price position of each travel agent and the level of ambiguity of the information provided. This explanation will be addressed in more detail in subsequent sections of this chapter.

In order to test the effects of perceived trustworthiness on destination-specific choices, a logistic regression model, which included (1) the level of decision ambiguity, (2) the relative price position of the *PA-yes* versus the *PA-no* agents, and (3) the difference scores for perceived trustworthiness was run. While the main effect of

perceived trustworthiness on destination-specific choice is non-significant, some interesting effects are worth noting. First, results revealed a significant main effect of the level of ambiguity on destination-specific choices ($\beta = 1.00$, Wald = 4.33, $p < 0.05$). On average, 57% of subjects chose the *PA-yes* travel agent in the *high-ambiguity* condition, compared with only 49% in the *low-ambiguity* condition. It appears that the level of decision ambiguity plays a significant role in determining the extent to which subjects placed importance on a firm's willingness to provide information about its competitors when making a purchase decision.

There was also a significant interaction between the level of decision ambiguity and the relative price position of the *PA-yes* versus the *PA-no* travel agents ($\beta = 3.16$, Wald = 13.78, $p < 0.001$). As shown in Figure 19, irrespective of the level of ambiguity, subjects almost always chose the *PA-yes* travel agent when it dominated on price. This makes intuitive sense, as this travel agent offered both the advantage of providing comparative information *and* the best prices. Of greater interest are the results obtained when the *PA-yes* travel agent's relative price position was worse than that of the *PA-no* travel agent. In this case, only 4.55% of subjects choose the *PA-yes* agent when the level of ambiguity was low compared to 23.36% when ambiguity was high. Broken down by destination, the results reveal a similar pattern across the four destination choices (see Figure 20). Pearson's Chi-square test on proportions reveals a significant association between the level of ambiguity and destination choices ($\lambda^2 = 24.52$, $p < 0.001$), which is consistent with the logistic regression results reported previously.

Figure 19: Choice Share of the *PA-yes* Travel Agent by Level of Ambiguity (Study 4)

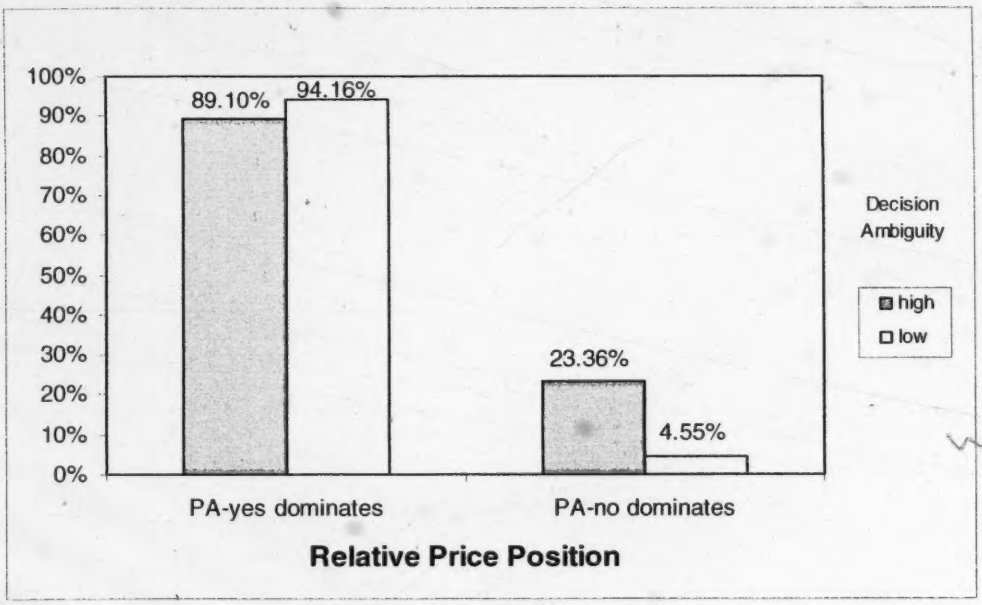
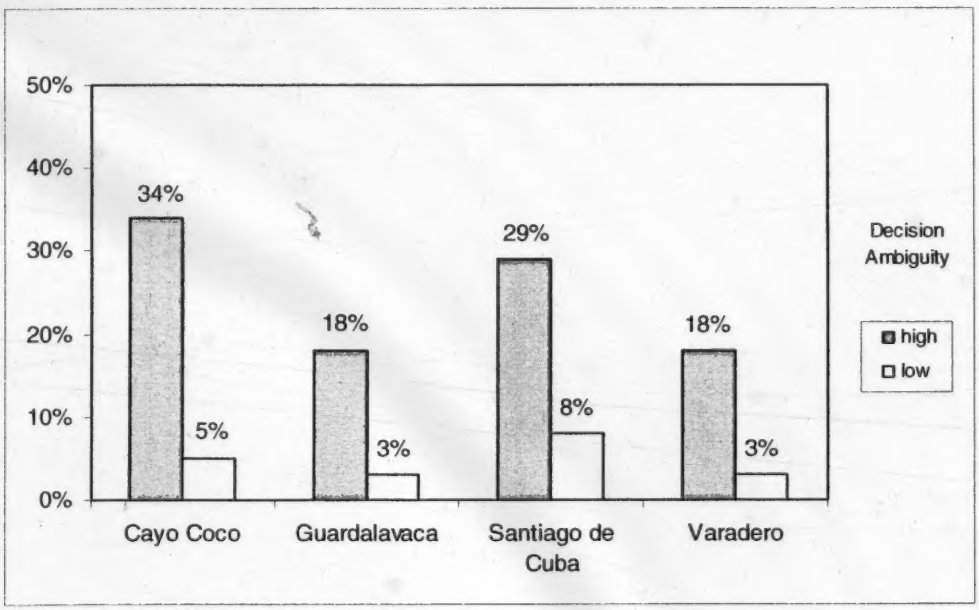


Figure 20: Choice Share of the *PA-yes* Travel Agent when the *PA-no* Travel Agent was Objectively Superior (Study 4)



Higher levels of perceived trustworthiness were associated with an increase in the probability that subjects would choose the *PA-yes* travel agent in the overall firm choice task ($\beta = 1.612$, Wald = 17.836, $p < 0.001$). Overall, 78% of respondents choose the *PA-yes* travel agent as the one they would prefer to win a discount coupon from (and thus, engage in a future transaction with). Broken down by the level of ambiguity, approximately 79.5% of subjects in the *high-ambiguity* condition chose the *PA-yes* agent versus approximately 76.6% in the *low-ambiguity* condition. While this difference was not statistically significant ($\beta = 2.12$, Wald = 2.80, $p = 0.095$), it does provide directional support for the hypothesis that the level of decision ambiguity moderates the positive effect of providing access to competitor information on consumer preference.

The final measure of consumer preference relates to the relative strength of subjects' overall firm choice. As stated previously, the provision of access to competitor information had a strong positive impact on this measure, as subjects indicated they would require an additional 7.61% discount from the *PA-no* travel agent in order to make them indifferent between the *PA-yes* and *PA-no* agents. An ANOVA was run to test the effects of perceived trustworthiness on this measure of consumer preference. It included (1) the level of decision ambiguity, (2) the order in which agents were presented, (3) the price order condition, and (4) the difference scores for perceived trustworthiness. Results indicate that perceived trustworthiness had a significant positive effect on the strength of subjects' choices ($F_{1,146} = 36.16$, $p < 0.001$). However, the predicted moderating effect of ambiguity was non-significant, and no other variables in this model were found to significantly influence subjects' relative strength of choice. The adjusted R^2 is 0.203.

4.6: Discussion – Study 4

To better understand the impact of ambiguity on consumers' choices, it may be beneficial to examine the patterns of choice proportions throughout this study. In the initial stage of the experiment (prior to the manipulation of ambiguity), an average of 67% of subjects choose the *PA-yes* travel agent during the 4 destination choices, indicating that the effects of providing access to comparative information on consumer preference can be apparent immediately. However, the question remains as to whether or not these effects are sustainable in future purchase situations. Results of the overall choice data in the first phase indicate that this may be the case as 77% of subjects choose the *PA-yes* travel agent in their overall choice.

However, during the follow-up questionnaire, only 53% of subjects chose the *PA-yes* agent during the four individual destination choices, leading me to question the sustainability of the effects of providing access in situations where such comparisons are no longer provided. There are several plausible explanations for this large drop from the initial phase. First, the absence of the act of providing access in this stage of the experiment may have led to this reduction. However, the overall choice measure from this follow-up phase indicates that this may not be the case, as 78% of subjects chose the *PA-yes* travel agent in this overall choice task. In order to rule out this factor as a plausible explanation of these results, future research should explore consumers' responses in situations in which a firm that initially provided access to competitor information no longer does so. That is, can the positive effects of providing access to competitor information on consumer preference in one purchase situation transfer to future purchase situations in which the firm no longer supplies such information?

A second explanation of this pattern of choice proportions relates to the introduction of ambiguity in the follow-up stage. While only 53% of subjects chose the *PA-yes* agent across the four destinations, 57% choose the *PA-yes* agent when ambiguity was high as opposed to only 49%, when ambiguity was low. This is consistent with the hypothesis that the positive effect of the provision of access to competitor information on consumer choice is more apparent under conditions in which the decision ambiguity is high rather than low.

Finally, these effects can be explained by looking at the type of influences affecting each type of consumer choice. One could argue that these changes in the proportion of subjects choosing the *PA-yes* travel agent during the four destination choices may have been more influenced by situational factors, namely the decision ambiguity and the relative price position of the competitors. However, consumers' long term choice may have remained relatively stable between the two phases of the experiment because it is primarily influenced by more stable characteristics of the firm, namely the fact that the *PA-yes* travel agent provided information about its competitors and the *PA-no* travel agent did not.

4.7: General Discussion of Studies 3 and 4

In sum, the results of these two experiments provide further support for the hypothesis that providing access to competitor information can benefit the firm in terms of increasing consumer preference for that firm relative to its competitors. Furthermore, these studies illustrate that this effect is mediated, at least in part, by the level of perceived trustworthiness of the firm providing such access. The provision of access to

competitor information can be a powerful signal of firm trustworthiness which, in turn, may influence consumer decision making.

Study 3 also shows that the positive effect of providing access to competitor information is not limited to outcome measures of consumer preference (i.e., stated preference and binary choice), but can also positively impact other process-related measures. In this study, the provision of access to competitor information was found to increase the magnitude of the difference between the time spent viewing information from the focal retailer and the time spent viewing information from independent sources. The implications are such that a firm has the potential to reduce the amount of time its consumers spend gathering information relevant for their decision making directly from its competitors by giving them the necessary information itself. In essence, the provision of access to competitor information has the potential to collapse the extent of consumer search behavior to the point in which the firm providing comparative information becomes their primary information source. This issue will be explored in greater detail in Chapter 5.

In terms of the moderating effects of objective market position and the level of decision ambiguity, the results are somewhat mixed. Study 3 provides support for the moderating role of market position in the relationship between the provision of access to competitor information and perceived trustworthiness (H_4). With respect to the level of ambiguity, however, further research may be required to better understand its role in the relationship between the provision of such access and consumer preference. The combined results of Studies 3 and 4 suggest that the point at which ambiguity enters the decision making environment can impact whether or not it will influence the relationship

between providing access to competitor information and preference. That is, high ambiguity was found to interfere with the development of trust in Study 3 when introduced immediately and prior to allowing for any development of trust to take place. However, the results of Study 4 indicate that, consistent with H_6, the effect of providing such access on consumer preference is greater when the level of ambiguity is high rather than low, provided that the introduction of decision ambiguity occurred after the initial formation of trust. If ambiguous information environments actually inhibit the development of trust, as Study 3 seems to indicate, then this would suggest that firms must be cautious about providing access to competitor information if the nature of the information is likely to increase the ambiguity for consumers, thereby making the decision making process more difficult. That is, in ambiguous information environments, the provision of access to competitor information may be a double-edged sword.

In the next chapter, the focus of this research shifts to the effects of the provision of access to competitor information on consumers' amount of independent search and preferences. In addition, the role of independent search costs as a moderating variable in the relationship between the provision of such access and consumer preference will be examined. Finally, the sustainability of the effects of the provision of access to competitor information on preference will also be explored.

Chapter 5: The Provision of Access to Competitor Information and Consumer Information Search

Thus far, the focus of this research has been on the effects of the provision of access to competitor information on consumer preference that are mediated by consumers' perceptions of trustworthiness. In this chapter, the focus extends to those effects that are mediated, not only by consumer perception, but also by overt behavior – namely the amount of independent search consumers engage in.

The cost-benefit framework of consumer information search suggests that consumers will expend search effort as long as the perceived benefits outweigh the perceived costs (Punj and Staelin 1983; Srinivasan and Ratchford 1991). Furthermore, higher external information search costs have consistently been found to significantly reduce the amount of external information search undertaken (see e.g., Moorthy, Ratchford, Talukdar 1997). In this research, the provision of access to competitor information can be thought of as a mechanism, internal to the firm, which reduces the cost of obtaining competitor information, thereby making the information environment more transparent for the consumer (Lynch and Ariely 2000). This dichotomy of search cost reduction mechanisms – internal to the firm via the provision of access to competitor information and external to the firm via the structure of the information environment – implies the need to explore the relationship between these two variables. In this chapter, I examine the effects of the provision of access to competitor information on consumers' perceived trustworthiness, amount of independent search undertaken, and preference under conditions in which independent search costs vary. These effects will be tested in

Phase 1 of the experiment. In addition, a preliminary investigation as to the sustainability of these effects is provided in Phases 2 and 3.

5.1: Method – Study 5

In this paper, the effects of (1) the provision of access to competitor information, and (2) the cost of independent search on the level of perceived trustworthiness of the focal firm, the amount of independent search undertaken by consumers, and consumers' subsequent preferences were examined. After signing a consent form (Appendix N), subjects could log in to the online experiment and read a description of the task (Appendix O). In a simulated online shopping environment, subjects were asked to shop for a number of vacation packages at an online travel agent, Fiesta Vacations, and evaluate it in relation to several competing travel agents that they also had the opportunity to examine. The experiment consisted of three phases, during each of which subjects' search patterns were systematically recorded and measures of preference were collected. Study participants were randomly assigned to one of twelve experimental conditions in a 3 (provision of access) × 2 (cost of independent search) × 2 (price order condition) between-subjects full-factorial design.

The *provision of access to competitor information* was manipulated as follows. In the *PA-yes/high* condition, the focal travel agent (code-named "Fiesta Vacations") provided complete information about its own product offerings and those of the five competitors in the marketplace. In the *PA-yes/low* condition, the focal travel agent only provided information about its own product offerings and those of one competitor (code-named "Holiday Tours"). Finally, in the *PA-no* condition, the focal travel agent only

provided information about its own product offerings, with no competitor information given.

While I do not present formal hypotheses as to whether or not the effects of providing such access are sustainable, Phases 2 and 3 of this study are designed to explore how consumers respond when a firm that initially provided complete information about other competitors in the marketplace no longer provided such comparative information. In Phase 2 of the experiment, six new travel agents, described as regional agents that dealt only with vacation packages to Cuba, were included in a list of competitors that subjects could independently search. However, the focal travel agent did not provide any information about these new competitors, regardless of the degree to which the focal agent provided such access in Phase 1. In essence, in the *PA-yes/high* condition, the focal agent only provided information about the original five competitors from Phase 1, meaning that the information was no longer completely representative of the current market offerings. Similarly, the *PA-yes/low* travel agent only provided information about one competitor. In Phase 3, subjects were told that the focal travel agent had recently begun offering packages to Costa Rica. However, the focal travel agent did not provide any information about its competitors for these destinations. Subjects could obtain information about competitor offerings for these Costa Rican destinations through independent search.[11]

The *cost of independent search* was manipulated in the following manner. In the *low-search costs* condition, subjects were given direct links from the researcher's page to each competitor's search results pages for the destination being evaluated. After viewing

[11] Since the six new regional travel agents added to Phase 2 only provided packages to Cuban destinations, these were not included in the list of competitors in Phase 3.

the focal retailer's information for any given destination, subjects were taken back to the experimental page and told, "We have provided you with the following links to five main competitors' websites. In order to make the best possible choice, please feel free to visit any of these sites to view their current offers to *(destination)*." Subjects in this condition were able to access information about the travel packages offered by competitors directly from the experimenter's page. In the *high-search costs* condition, subjects were told in the initial instructions that accounts had been established at several competing travel agents that would allow them access to these sites for the purposes of this study. They were told that, because they were evaluating membership-based services, they would be required to use passwords prior to entering into the competitors' websites. At the experimenter's site, subjects were given exactly the same instructions as in the *low-search costs* condition. However, once subjects clicked on the competitor link, they were taken to a login page that required them to input a username and password prior to commencing their search. Furthermore, instead of accessing the search results pages directly, subjects were required to re-enter the destination, departure city, and travel dates on the search query page prior to obtaining the required search results. This manipulation of search costs was identical across all three phases of the experiment. As in previous studies, the order in which subjects were exposed to the comparative outcomes was counterbalanced such that in one condition, the focal travel agent offered the lowest price on the first destination, and in the other condition a competitor offered a lower price first.

Data were collected during several lab sessions consisting of approximately 15 subjects each. As the instructions were unique to each level of search costs, sessions were randomly assigned as either a *high-* or *low-search costs* condition.

In Phase 1, subjects searched for information about two Mexican beach destinations at the focal travel agent. After examining each destination package at the focal retailer, subjects were able to link to five other competitors offering similar vacation packages to that destination as a basis of comparison before choosing which of the six alternative travel agents they would most likely purchase from. Their pattern of information search across the competitors' websites was also systematically recorded. This initial stage was followed by a series of questions designed to measure their overall preference for the focal retailer. Again, the focal travel agent in the *PA-yes/high* condition provided comparisons with all competitors in the marketplace in this initial stage.

In the second stage of the experiment, subjects were asked to conduct a similar shopping task at the focal travel agent for two destinations in Cuba. Subjects were asked to choose a travel agent from the list of twelve for each individual destination as well as their overall choice. Once again, their pattern of search across the travel agents was systematically recorded. In Phase 3 of the experiment, subjects were asked to shop for two destinations in Costa Rica. Subjects once again had the opportunity to examine information from the focal agent and its five original competitors, but the six regional travel agents from Phase 2 were no longer present. In Phase 3, the *PA-yes/high* and *PA-yes/low* travel agents no longer offered any information about their competitors.

5.2: Results – Phase 1

Manipulation Checks

Manipulation checks for the two independent variables of interest indicated that the manipulations were successful. For the manipulation of the provision of access to

competitor information, subjects responded to the question, "How much information about its competitors did Fiesta Vacations give you on its own search results pages?" on a scale from 1 (*none*) to 9 (*some*). An ANOVA revealed that, in addition to the significant overall effect ($F_{2,198} = 33.88$, $p < 0.001$), all pair-wise planned contrasts among the *PA-yes/high (M = 7.38), PA-yes/low (M = 5.90),* and *PA-no (M = 4.00)* were significant at the $p < 0.001$ level and no other variables manipulated in this study significantly affected this measure.

For the manipulation of the cost of independent search, subjects were asked to respond to the question, "From the experimenter's page that contained links to all competitors' websites, how much effort was required to access the travel package information from each individual website?" on a scale from 1 (*low effort*) to 9 (*high effort*). An ANOVA revealed the mean responses for the *high- (M = 3.68)* versus *low- (M = 2.63) search costs* conditions were significantly different in the expected direction ($F_{1,198} = 10.19$, $p < 0.01$) and that no other variables manipulated in this study significantly affected this measure.

Perceived Trustworthiness

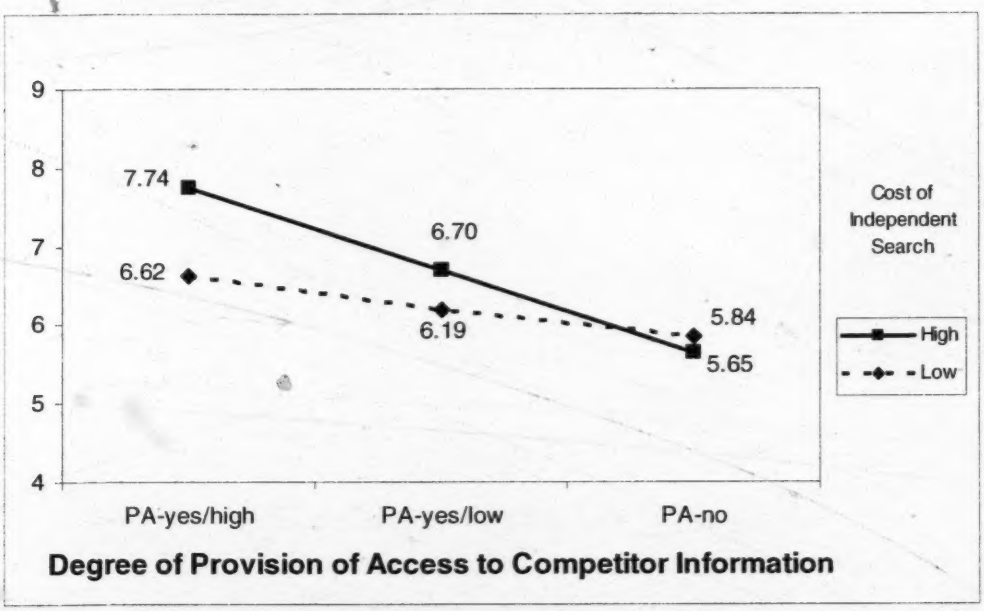
Consistent with previous studies, the provision of access to competitor information positively affected the level of perceived trustworthiness ($F_{2,198} = 28.02$, $p < 0.001$). The adjusted R^2 of this ANOVA model, which included the full effects of (1) the provision of access to competitor information, (2) the cost of independent search, and (3) the order in which subjects were exposed to the comparative outcomes, is 0.256[12]. Based on planned contrasts tests, all pair-wise mean differences for the *PA-yes/high*

[12] To test for non-linear effects of the provision of access to competitor information, the data were also analyzed in a regression model that tested both the linear and quadratic effects of such access on perceived trustworthiness. No significant quadratic effects were found and so the ANOVA results are reported here.

($M = 7.23$), *PA-yes/low* ($M = 6.46$) and *PA-no* ($M = 5.74$) were significant at $p < 0.001$. That is, the greater the degree to which access to competitor information was provided, the higher the level of perceived trustworthiness. Thus, H_1 is supported.

The model also reveals a significant main effect of the cost of independent search on perceived trustworthiness ($F_{1,198} = 9.10$, $p < 0.01$), as well as a significant interaction between this variable and the provision of access to competitor information ($F_{2,198} = 5.92$, $p < 0.01$). This significant interaction is consistent with the prediction that the magnitude of the positive effect of providing access to competitor information on consumers' level of perceived trustworthiness increases as the cost of independent search increases. Thus H_5 is supported (Figure 21). Simple effects tests reveal that the differences in perceived trustworthiness in the *high-* versus *low-search costs* conditions are significant for the *PA-yes/high* ($F_{1,68} = 22.40$, $p < 0.01$), but not in either the *PA-yes/low* ($F_{1,65} = 2.38$, $p > 0.10$) or the *PA-no* ($F_{1,65} = 0.68$, $p > 0.40$) conditions.

Figure 21: Perceived Trustworthiness of the Focal Travel Agent – Phase 1 (Study 5)



Independent Search

In this section, I examine the effects of the provision of access to competitor information and the cost of independent search on the degree to which consumers actively engage in searching for information that is externally available (i.e., found outside of the focal retailer's website). First, I define the measures of search to be examined. Next, I test the hypothesized main effect of the provision of access to competitor information on the amount of independent search in which subjects engage (H_7), as well as the predicted interaction effect between the provision of access to competitor information and the cost of independent search on each of the measures of search (H_8). The benchmark hypothesis that higher search costs will reduce the amount of independent search undertaken will also be examined for each of the measures of search.

Measures of independent search: The amount of search was examined using both the number of competitor websites visited and the percentage of total search time spent independently searching competitor websites.

Number of competitor websites visited: A repeated measures ANOVA was run to test the effects of (1) the provision of access to competitor information, (2) the cost of independent search, and (3) the order in which subjects were exposed to comparative outcomes on the number of websites visited. This model also tested for differences between the first and second destination search by including destination as a within-subject variable in the model.

As predicted by H_7, providing access to competitor information significantly reduced the total number of competitor websites visited ($F_{2,198} = 40.62$, $p < 0.001$). In addition to this significant main effect, there is also a highly significant interaction effect

between the provision of access to competitor information and the cost of external information search ($F_{2,198} = 4.89$, $p < 0.01$), thus supporting H_8. The benchmark hypothesis, that higher independent search costs would result in less independent search, is also confirmed ($F_{1,198} = 16.44$, $p < 0.001$).

Subjects' amount of search varied significantly across the two destinations, as indicated by a highly significant main effect ($F_{1,198} = 54.14$, $p < 0.001$) of this variable, as well as a significant interaction between destination and the provision of access variable ($F_{2,198} = 32.80$, $p < 0.001$). Univariate ANOVAs for each destination, which include the full effects of (1) the provision of access to competitor information, (2) the cost of independent search, and (3) the order in which subjects were exposed to the comparative outcomes, indicate that the provision of access to competitor information significantly reduced the number of competitor websites visited, both for the first destination ($F_{2,198} = 5.65$, $p < 0.01$) and for the second destination ($F_{2,198} = 72.27$, $p < 0.001$). As expected, higher costs of independent search also lowered the amount of search in both the first ($F_{1,198} = 7.71$, $p < 0.01$) and the second ($F_{1,198} = 19.99$, $p < 0.001$) destination search. Finally, while the interaction between the provision of access to competitor information and the cost of independent search is significant in the second search task ($F_{2,198} = 5.21$, $p < 0.01$), this effect is non-significant in the first ($F_{1,198} = 2.29$, $p > 0.10$). The adjusted R^2 values are 0.106 for the first search and 0.443 for the second. The mean numbers of websites visited for each destination are shown in Figures 22 and 23.

Figure 22: Number of Competitor Websites Visited During the First Destination Search – Phase 1 (Study 5)

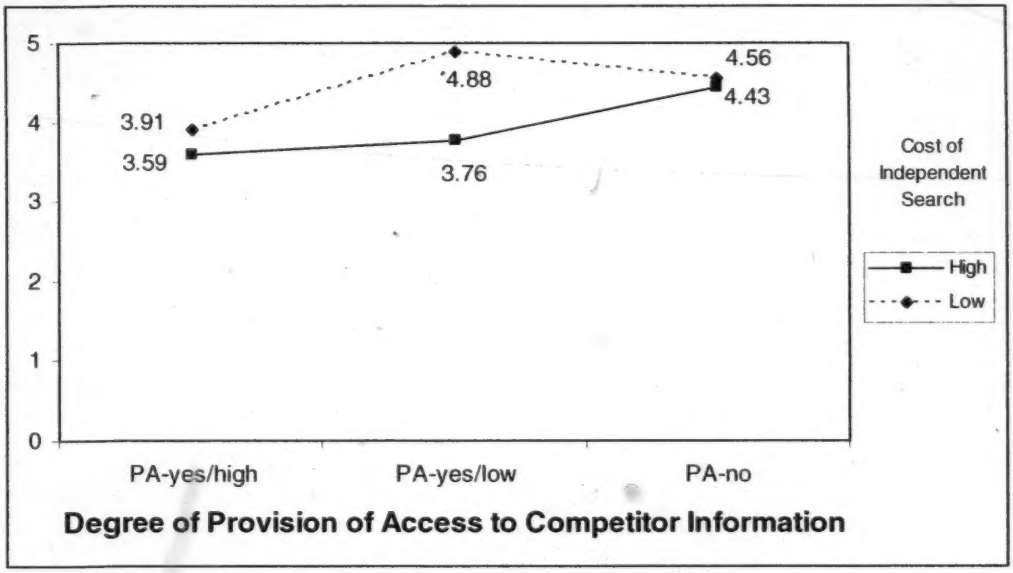
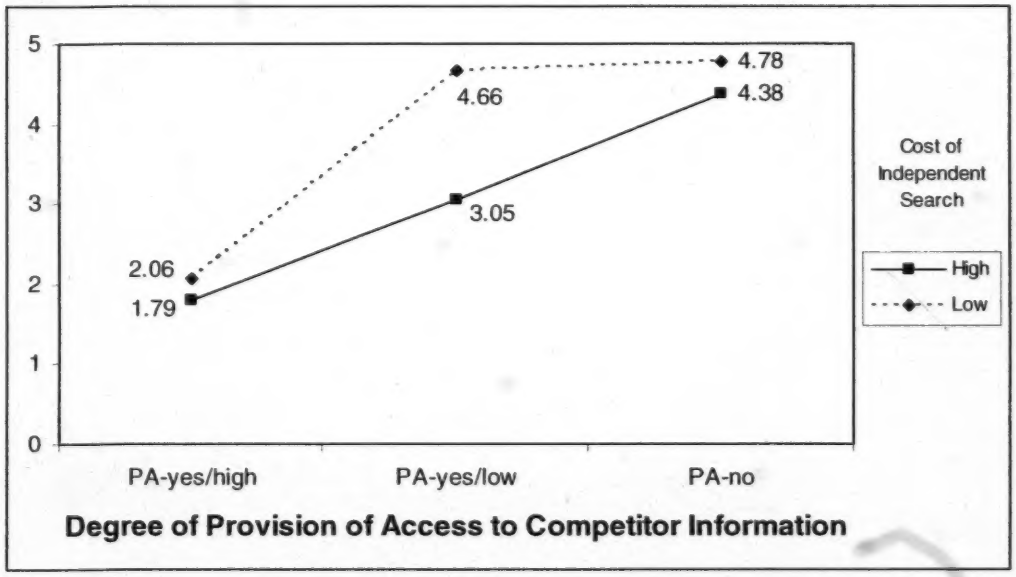


Figure 23: Number of Competitor Websites Visited During the Second Destination Search – Phase 1 (Study 5)



Independent sample t-tests were run to compare the differences in means between the *high*- and *low-search cost* conditions for each level of provision of access to

competitor information. Regardless of the level of search costs in the *PA-yes/high* condition, subjects searched roughly the same number of competitor sites in both the first ($t_{70} = 0.79$, $p > 0.40$) and the second ($t_{70} = 0.66$, $p > 0.50$) destination search. Since subjects had access to all competitor information internally, the need to search independent sources was minimal. In the *PA-no* condition, subjects also visited approximately the same number of competitor websites, regardless of search costs, in the first ($t_{67} = 0.46$, $p > 0.60$) and second ($t_{67} = 1.71$, $p > 0.09$) destination. In this case, independent search costs were irrelevant because the lack of competitor information provided internally necessitated independent search in order for subjects to make an informed decision.

The most interesting result occurs when the focal travel agent only provides access to one other competitor (i.e., the *PA-yes/low* condition). In this case, subjects in the *high-search costs* condition searched substantially less than subjects in the *low-search costs* condition, and this was the case for both the first ($t_{67} = 3.90$, $p < 0.001$) and second ($t_{67} = 5.35$, $p > 0.001$) destination. This result could be explained in terms of the cost/benefit framework of consumer information search. That is, consumers are willing to continue searching as long as the added benefits of searching for additional information outweigh the costs (Moorthy, Ratchford, and Talukdar 1997). Because subjects in the *PA-yes/low* condition know that the focal retailer is providing the information about the best alternative in the marketplace, they may perceive very few additional benefits to searching the websites of other competitors. Therefore, when search costs are high, these costs are more likely to outweigh the benefits of additional search. In essence, knowing the focal firm gives them information about the "best" competitor – as indicated by the

information provided by the focal travel agent – allows them to simplify their search effort and ignore other competitors. Consumers are able to substitute an inefficient search tool (i.e., visiting all other competitors themselves) with a more efficient one that provides information about its competitors. Relative to that of the *PA-yes/high* condition, the tool in the *PA-yes/low* condition may be even more efficient because it provides information about the best alternative as opposed to all alternatives[13].

Search Time: A repeated measures ANOVA was run to test the effects of (1) the provision of access to competitor information, (2) the cost of independent search, and (3) the order in which subjects were exposed to comparative outcomes on the percentage of total search time subjects spent independently searching competitor websites. As in the case of the number of websites visited, destination was included in the model as a within-subject variable to test for differences across the two destination searches.

Results indicate that providing access to competitor information significantly reduced the percentage of total search time spent independently searching competitor websites ($F_{2,198} = 131.64$, $p < 0.001$), lending further support to H_7. In addition to this significant main effect, there is also a significant interaction effect between the provision of access to competitor information and the cost of external information search ($F_{2,198} = 3.30$, $p < 0.05$), thus supporting H_8. The benchmark hypothesis, that higher independent search costs would result in less independent search, is also supported ($F_{1,198} = 5.47$, $p < 0.05$).

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[13] A more conservative estimate of amount of search is the number of competitors the focal travel agent provided information about plus the number of additional competitors (i.e., those not supplied by the focal agent) searched independently. In the *PA-yes/low* condition, even this conservative estimate reveals significant differences in the number of competitor websites visited under *high-* versus *low-search costs* in both the first destination ($M = 4.00$ versus $M = 4.91$, $t_{67} = 3.60$, $p < 0.001$) and the second destination ($M = 3.46$ versus $M = 4.88$, $t_{67} = 5.97$, $p < 0.001$) search.

This analysis revealed a significant difference in the percentage of total search time spent independently searching competitor websites across the two destinations, as indicated by a significant main effect of destination ($F_{1,198} = 13.36$, $p < 0.001$) and a significant interaction between destination and the provision of access to competitor information ($F_{2,198} = 26.52$, $p < 0.001$). Therefore, separate univariate ANOVAs were run for each destination.

The provision of access to competitor information significantly reduced the percentage of total search time spent independently searching competitor websites, both for the first destination ($F_{2,198} = 68.27$, $p < 0.001$) and for the second destination ($F_{2,198} = 116.45$, $p < 0.001$). As expected, higher costs of independent search also reduced this percentage in both the first ($F_{1,198} = 3.61$, $p < 0.05$, 1-tailed) and second ($F_{1,198} = 3.79$, $p < 0.05$, 1-tailed) destination search. Finally, while the interaction between the provision of access to competitor information and the cost of independent search is significant in the second search task ($F_{2,198} = 2.82$, $p < 0.05$, 1-tailed), this effect is non-significant in the first ($F_{1,198} = 1.65$, $p > 0.10$). The adjusted R^2 values are 0.410 for the first destination search and 0.541 for the second. The percentages of total search time spent independently searching competitor websites for each destination are shown in Figures 24 and 25.

Figure 24: Percentage of Total Search Time Spent Independently Searching Competitor Websites During the First Destination Search – Phase 1 (Study 5)

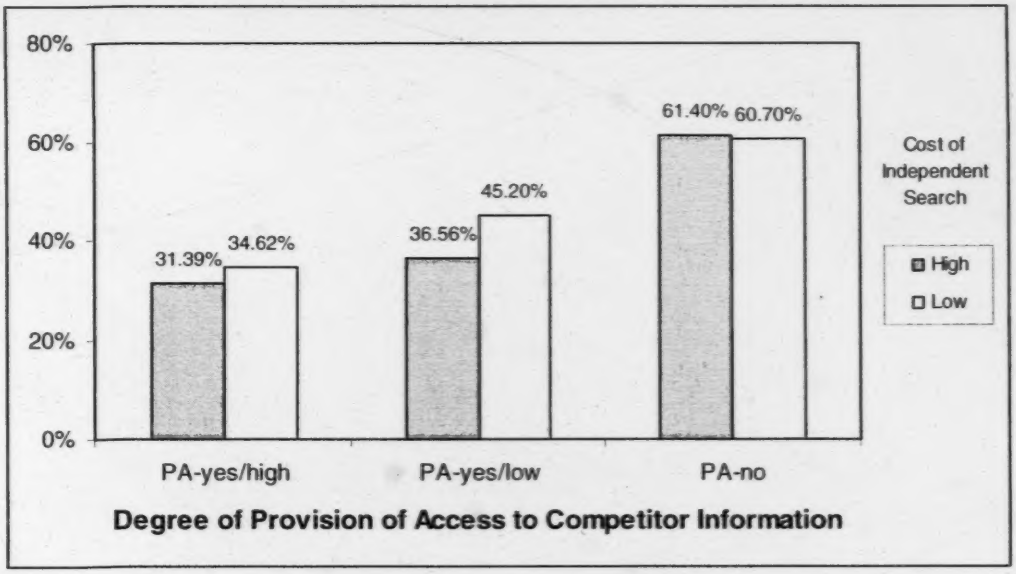
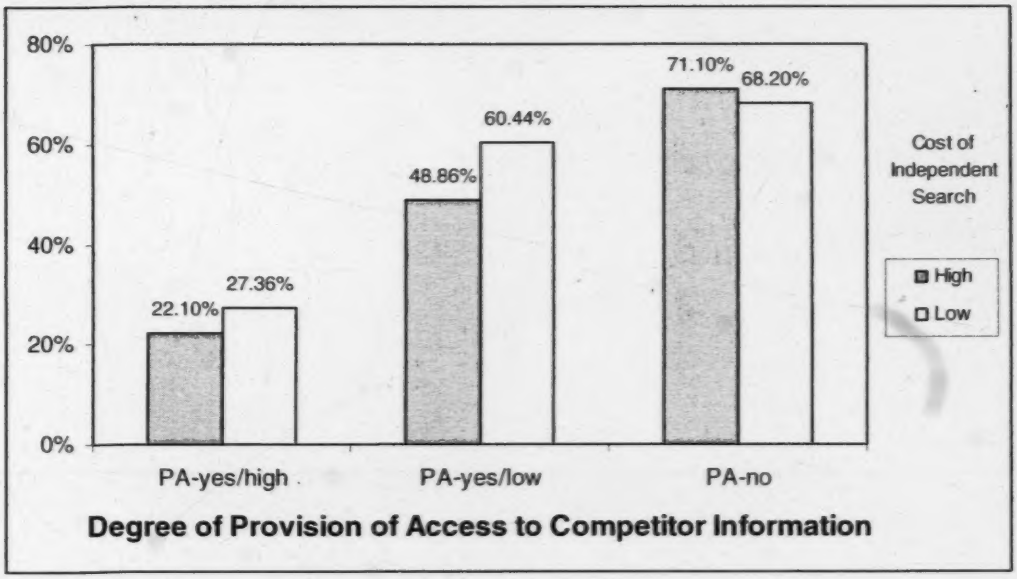


Figure 25: Percentage of Total Search Time Spent Independently Searching Competitor Websites During the Second Destination Search – Phase 1 (Study 5)



Independent sample t-tests were run to compare the differences in means between the *high-* and *low-search cost* conditions for each level of provision of access to competitor information. Regardless of the level of search costs in the *PA-yes/high* condition, subjects spent approximately the same percentage of total search time independently searching competitor sites in both the first ($t_{70} = 0.85$, $p > 0.40$) and the second ($t_{70} = 1.08$, $p > 0.25$) destination search. In the *PA-no* condition, subjects also spent approximately the same percentage of total search time at competitor websites, irrespective of the level of search costs in the first ($t_{67} = 0.19$, $p > 0.80$) and second ($t_{67} = 0.80$, $p > 0.40$) destination. In the case in which the focal travel agent provides access to only one other competitor (i.e., the *PA-yes/low* condition), subjects in the *high-search costs* condition spent substantially less of their overall search time independently searching competitor websites than subjects in the *low-search costs* condition. This was the case for both the first ($t_{67} = 2.84$, $p < 0.01$) and second ($t_{67} = 2.78$, $p > 0.01$) destination searches. These results are consistent with the effects of the provision of access to competitor information on the number of competitor websites visited[14].

In sum, there is substantial evidence in support of both H_7 and H_8. That is, as the degree to which the focal retailer provides access to competitor information increases, the amount of consumers' independent search (both in terms of quantity and time) decreases. Furthermore, this effect appears to be moderated by the cost of obtaining the same information from external sources such that the magnitude of the effect is strongest when external search costs are high rather than low.

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[14] Similar results were obtained when using the total time in seconds, as opposed to the percentage of total search time, as a measure of the amount of independent search. However, as this measure does not account for individual differences in terms of the amount of time spent attending to the experimental task, the complete analysis is not reported here.

Preference

In this section, I examine the effects of the provision of access to competitor information and the cost of independent search on multiple measures of consumer preference. First, I will define the measures of preference obtained in this study. Next, I explore the effects of the provision of access to competitor information on these measures of preference. This analysis will include both an examination of the direct effects of the provision of access on preference as well as that which is mediated by (1) the level of perceived trustworthiness and (2) the amount of independent search undertaken.

Measures of Consumer Preference: Four separate measures of consumer preference were collected in this study. First, subjects were asked to make a choice for each destination about which they were asked to search for information. During the Mexico phase, subjects were given the opportunity to view information from the focal retailer and five competitors. Then they were asked to respond to the following question, "If you were to purchase a vacation package to *(destination)*[15], which of the following travel agents would you be more likely to purchase from?" for both destinations searched. Their responses were coded as a binary choice such that they were coded as +1 if they chose the focal travel agent and -1 if they chose *any* of the five competitors.

Once both destination searches were completed, subjects were asked to respond to a series of follow-up questions to further measure preference. First, subjects were asked to make an overall choice of travel agent, based on their overall search behavior. Subjects were reminded of the random draw (see method section) and then asked, "Which of the following travel agents would you prefer to receive a discount coupon for a Mexican vacation package from?" They were required to select from a list of the six options. Once

[15] Italics indicate information that was determined interactively.

again, this data was coded as +1 if they chose the focal travel agent and -1 if they selected *any* of the five competitors.

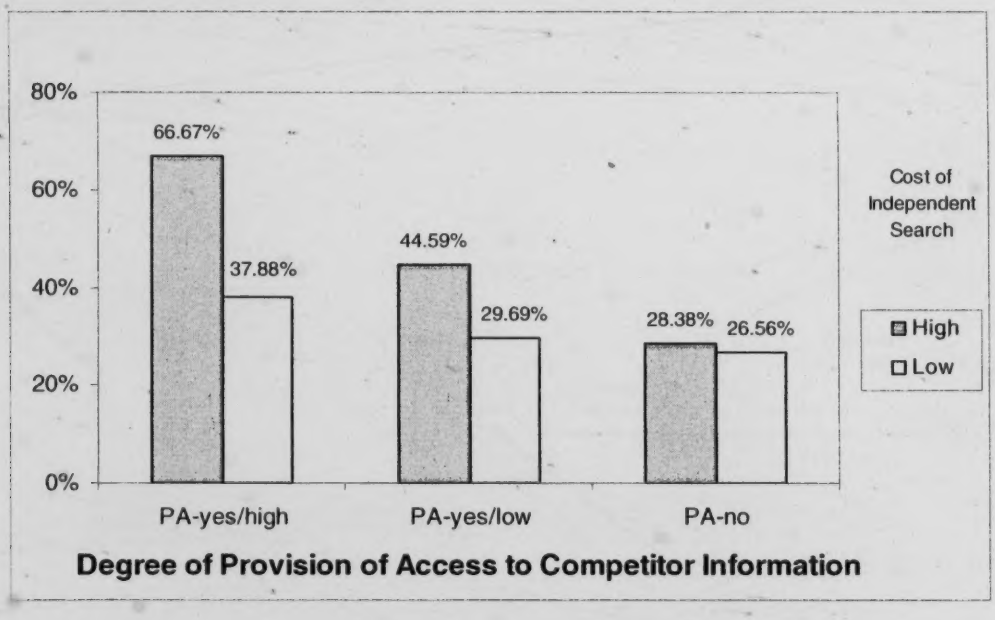
In order to obtain a measure of the strength of this choice relative to their next-best option, subjects were asked: "If *(option chosen in first task)* was not available, which of the remaining travel agents would you prefer to receive a discount coupon from?" While the data from this question was not directly analyzed, it was used to determine the travel agents listed in the follow-up graded paired comparison question. Here, they were asked, "How many percentage points of additional discount would *(2^{nd} choice)* have to offer you to make it equally attractive to *(1^{st} choice)*?" The percentage discount indicated was coded as positive if the focal travel agent was selected in the first overall choice task and negative if a competitor was selected.

For the final, likelihood-based measure of preference, subjects were asked, "Suppose you decided to purchase your next vacation package from an online travel agent. Based on your search information about Mexican beach destinations at both Fiesta Vacations and its competitors' websites, how likely would you be to purchase it from Fiesta Vacations?" Subjects responded on a nine-point scale anchored by "*not at all likely*" to "*very likely*."

Destination-specific choice: For this analysis, the data from the two destination-specific choices were pooled for each individual respondent. Logistic regression was used to test the full model effects of (1) the level of provision of access to competitor information, (2) the cost of independent search, and (3) the price position on the focal agent relative to its competitors (i.e., better or worse). The latter variable was constructed by combining the manipulation of price order with the specific destination for which the

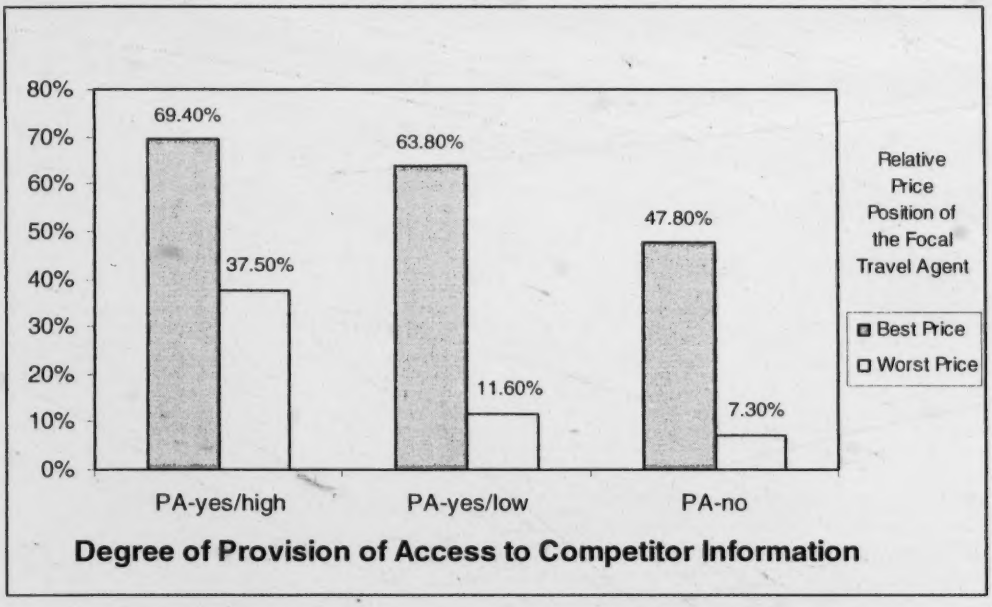
choice was being made. This reflects the fact that the focal retailer's price was better or worse than its competitors for either the first or second destination searched. Logistic regression analysis indicates that the percentage of subjects choosing the focal agent in the *PA-yes/high* (53.47%), *PA-yes/low* (37.68%), and *PA-no* (27.54%) were significantly different from each other and in the expected direction (Wald = 19.05, $p < 0.001$). The contrasts for each parameter estimate reveal that this overall significant effect was driven primarily by differences in choice percentages between the *PA-yes/high* and *PA-yes/low* levels ($\beta = 0.83$, Wald = 7.46, $p < 0.01$). The parameter measuring the contrast between the *PA-yes/low* and *PA-no* levels was only marginally significant ($\beta = 0.68$, Wald = 3.04, $p = 0.081$). In addition, the model reveals a significant main effect of search costs on destination-specific choice ($\beta = 0.90$, Wald = 9.75, $p < 0.01$). Overall, a larger percentage of subjects in the *high-search costs* (46.90%) condition chose the focal travel agent than those in the *low-search costs* (31.44%) condition. Finally, the main effect of relative price position was also significant ($\beta = 2.27$, Wald = 62.15, $p < 0.001$), which is consistent with the benchmark effect that higher objective market position results in stronger preference. The adjusted R^2 is 0.267. Destination-specific choice shares are provided in Figure 26.

Figure 26: Choice Share of the Focal Travel Agent for Destination-Specific Choices by Cost of Independent Search – Phase 1 (Study 5)



This model also reveals a significant interaction between the relative price position of the focal travel agent and the provision of access to competitor information parameter representing the difference between the *PA-yes/high* and the *PA-yes/low* conditions ($\beta = 1.13$, Wald = 3.47, $p < 0.05$). Approximately 69% of subjects in the *PA-yes/high* condition chose the focal travel agent when it offered the best price versus approximately 63% in the *PA-yes/low* condition. This difference was non-significant. However, when the focal retailer offered a price that was worse than its competitors, the percentage of subjects who chose the focal travel agent was significantly higher in the *PA-yes/high* condition (37.50%) than in the *PA-yes/low* condition (11.59%) (see Figure 27).

Figure 27: Choice Share of the Focal Travel Agent for Destination-Specific Choices by Relative Price Position – Phase 1 (Study 5)



One possible explanation of this effect is related to the type of inferences subjects make about missing information. In the *PA-yes/low* condition, the presence of the negative comparison to only one competitor and the absence of information regarding the other competitors may have resulted in subjects making inferences that the focal agent was worse than other competitors in the marketplace. In other words, they may infer that the dominant competitor is representative of other competitors in the marketplace, thus lowering their overall evaluation of the focal firm. However, subjects in the *PA-yes/high* condition have complete information about all firms in the marketplace. Therefore, subjects can see the focal retailer's true position and are less likely to make such negative inferences.

To test for the predicted mediation effects, the level of perceived trustworthiness was added as a covariate in the model and was found to significantly increase the probability that subjects would choose the focal agent during the destination choices

($\beta = 0.42$, Wald = 13.52, $p < 0.001$). While the overall effect of providing access remained significant (Wald = 6.54, $p < 0.05$), the beta coefficients on the contrasts revealed that neither the difference between the *PA-yes/high* and *PA-yes/low* ($\beta = 0.56$, Wald = 3.14, $p > 0.07$) nor between the *PA-yes/low* and *PA-no* ($\beta = 0.38$, Wald = 0.91, $p > 0.34$) were significant. The parameter estimates for the provision of access to competitor information were significantly reduced when the variance due to the level of perceived trustworthiness was accounted for. While this suggested a mediating relationship, evidence indicates only partial mediation as the overall effect of the provision of access variable remains significant. Furthermore, removing this variable from the model resulted in a reduction in the adjusted R^2 from 0.292 to 0.263, indicating that the provision of access variable affects destination-specific choice over and above that which is mediated by the level of perceived trustworthiness.

Similar results were obtained when the amount of search was added as a covariate in the model[16]. In this case, the percentage of total search time spent independently searching competitor websites sites had a significant effect on the probability that subjects would choose the focal retailer ($\beta = -1.69$, Wald = 5.60, $p < 0.01$). The adjusted R^2 is 0.277. As subjects spent a larger percentage of their search time at competitors websites (as opposed to the focal travel agent's website), the probability of them choosing the focal retailer was significantly reduced. In addition, the main effect of the provision of access to competitor information on individual destination choice is no longer statistically significant (Wald = 4.72, $p > 0.09$). Both contrasts reveal that the parameter estimates for the *PA-yes/high* vs. *PA-yes/low* levels ($\beta = 0.52$, Wald = 2.49,

[16] Only measures of amount of search that significantly affect consumer preference will be discussed in all mediation analyses.

$p > 0.11$) and the *PA-yes/low* vs. *PA-no* levels ($\beta = 0.39$, Wald = 0.90, $p > 0.34$) are no longer significant, providing support for the predicted mediation. When the provision of access variable is removed from the model, the R^2 value drops from 0.277 to 0.247. As predicted, it appears that the amount of independent search mediates the effects of providing access to competitor information on this measure of consumer preference.

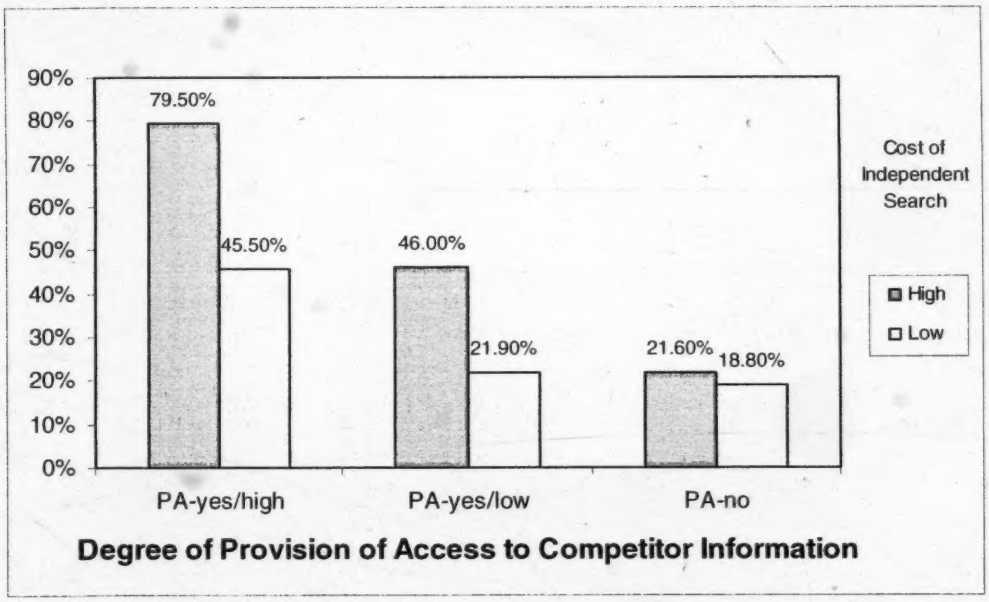
The final test for mediation was to include both covariates in the model simultaneously to account for variability due to both the level of perceived trustworthiness and the amount of independent search undertaken. Both the level of perceived trustworthiness ($\beta = 0.42$, Wald = 13.41, $p < 0.001$) and the amount of independent search ($\beta = -1.71$, Wald = 5.53, $p < 0.05$) significantly affected the probability that subjects would choose the focal travel agent for the destination-specific choice in the expected directions. Furthermore, the effect of providing access to competitor information is no longer statistically significant (Wald = 0.66, $p > 0.70$), and removing it from the model only reduces the adjusted R^2 from 0.301 to 0.283. This reduction may be explained by the removal of the significant interaction between the degree to which comparative information was provided (between the *PA-yes/high* and *PA-yes/low* conditions) and the relative price position of the focal retailer ($\beta = 1.25$, Wald = 4.01, $p < 0.05$). The correlation between the level of perceived trustworthiness and the amount of independent search is only -0.036 and thus, multicollinearity between the two mediators does not appear to be present in the data.

Consistent with H_2, the provision of access to competitor information had a positive effect on the probability that subjects would choose that firm during destination-specific choices. Furthermore, this effect was mediated by both the level of perceived

trustworthiness (predicted by H_1 and H_3) and by the amount of independent search undertaken (predicted by H_7 and H_9). Consistent with the benchmark hypothesis, subjects' destination-specific choices were affected by the firm's relative price position. I now examine the effects of the provision of access to competitor information on subjects' overall choice of travel agent.

Overall Choice: A logistic regression model was run which included the full effects of (1) the provision of access to competitor information, (2) the cost of independent search, and (3) the order in which subjects were exposed to the comparative outcomes. Logistic regression analysis indicates that the percentage of subjects choosing the focal agent in the *PA-yes/high* (63.89%), *PA-yes/low* (34.78%), and *PA-no* (20.29%) were significantly different in the expected direction (Wald = 24.97, $p < 0.001$). The contrasts for each parameter estimate reveal that this overall significant effect was driven primarily by differences in choice probabilities between the *PA-yes/high* and *PA-yes/low* levels ($\beta = 1.32$, Wald = 11.62, $p < 0.001$). The parameter measuring the contrast between the *PA-yes/low* and *PA-no* levels was non-significant ($\beta = 0.69$, Wald = 2.77, $p = 0.096$). The model also reveals a significant main effect of search costs on overall choice ($\beta = 0.97$, Wald = 8.50, $p < 0.01$). Overall, a larger percentage of subjects in the *high-search costs* condition (49.56%) chose the focal travel agent than those in the *low-search costs* condition (28.87%). No other significant effects were found in this model, and the adjusted R^2 is 0.216. The choice shares of the focal travel agent for overall agent choice are provided in Figure 28.

Figure 28: Choice Share of the Focal Travel Agent for Overall Agent Choice – Phase 1 (Study 5)



To test for mediation, the level of perceived trustworthiness was added as a covariate in the model and was found to significantly increase the probability that subjects would choose the focal agent during the overall choice task ($\beta = 0.43$, Wald = 7.38, $p < 0.01$). However, the overall effect of providing access to competitor information remained significant (Wald = 11.80, $p < 0.01$), and removing this variable as a predictor in the model leads to a significant reduction in the adjusted R^2 value from 0.245 to 0.183. Thus, for this particular measure of preference, I do not find evidence of a mediating relationship.

In examining the mediating effects of amount of search, two sets of models were tested using (1) the number of competitor websites visited, and (2) the percentage of total search time spent independently searching competitors websites. The results of each will be discussed separately.

1) Number of competitor websites visited: First, I examine the mediating relationship between the provision of access to competitor information and overall choice using the number of competitor websites visited as a measure of the amount of independent search. When this variable is added to the logistic regression model as a covariate, its main effect significantly reduces the probability of choosing the focal agent ($\beta = -0.18$, Wald = 6.04, $p < 0.01$). However, the overall main effect of providing access remains significant (Wald = 10.13, $p < 0.01$) and removing the provision of access variable from the model substantially reduces the adjusted R^2 from 0.239 to 0.166. However, simultaneously adding both the level of perceived trustworthiness and the number of competitor sites visited as covariates in the original model revealed strong support for the mediating relationships predicted. Higher levels of perceived trustworthiness ($\beta = 0.44$, Wald = 7.40, $p < 0.01$) and lower amounts of external information search ($\beta = -0.18$, Wald = 6.14, $p < 0.05$) were found to significantly increase the probability that subjects would choose the focal retailer in the overall choice task. Furthermore, when accounting for variability due to both of these variables simultaneously, the effect of the provision of access to competitor information on overall choice is no longer statistically significant (Wald = 3.37, $p > 0.18$). The parameter estimates measuring the contrasts between the *PA-yes/high* and *PA-yes/low* ($\beta = 0.65$, Wald = 2.21, $p > 0.10$) and between the *PA-yes/low* and *PA-no* ($\beta = 0.24$, Wald = 0.30, $p > 0.50$) conditions are both non-significant. In addition, removing the provision of access variable from the model only reduces the adjusted R^2 from 0.267 to 0.242, which suggests that the effects of providing access to competitor information on overall firm choice is mediated by the level of perceived trustworthiness and the amount of

independent search. The correlation between the level of perceived trustworthiness and the number of competitor websites visited is only -0.054 and therefore, multicollinearity between the two mediators does not appear to be present in the data.

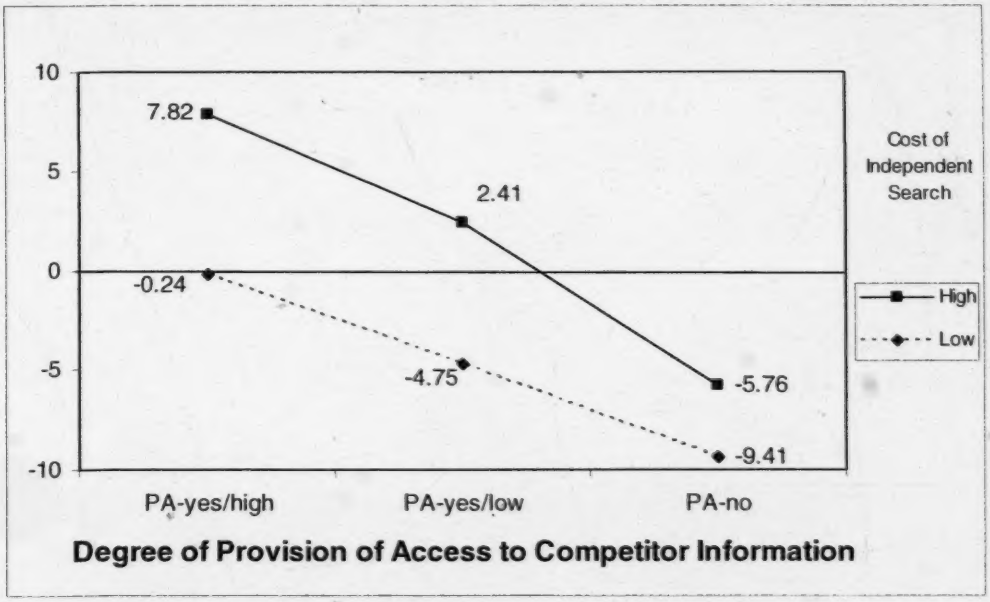
2) Percentage of total search time spent independently searching competitor websites: Similar effects to those described in the previous section were found for this measure. When added to the original logistic regression model as a covariate, the percentage of total search time spent independently searching competitor websites significantly reduced the percentage of subjects choosing the focal travel agent ($\beta = -2.55$, Wald = 4.18, $p < 0.05$). However, the main effect of the provision of access was still significant (Wald = 6.09, $p < 0.05$), and removing this variable from the model reduces the adjusted R^2 value from 0.231 to 0.186.

However, simultaneously adding both the level of perceived trustworthiness and the percentage of total search time spent independently searching competitor websites as covariates in the model revealed strong support for the mediating relationships. Higher levels of perceived trustworthiness ($\beta = 0.41$, Wald = 6.71, $p < 0.01$) and lower amounts of independent search ($\beta = -2.35$, Wald = 3.53, $p = 0.06$) were found to significantly increase the percentage of subjects choosing the focal travel agent in the overall choice task. Furthermore, when these variables are added to the model, the effect of the provision of access to competitor information on overall choice is no longer significant (Wald = 2.84, $p > 0.24$), and removing the provision of access variable from the model only reduces the adjusted R^2 from 0.258 to 0.235, which suggests that the effects of providing access to competitor information on firm choice is mediated by the level of perceived trustworthiness and the amount of independent search. Model results indicate

that the correlation between the two mediating variables is only 0.032, indicating that multicollinearity did not influence these results.

Relative Strength of Preference: To test the hypothesized effects on the relative strength of subjects' preference, an ANOVA model was run which included the full effects of (1) the provision of access to competitor information, (2) the cost of independent search, and (3) the order in which subjects were exposed to the comparative outcomes. As predicted by H_2, the provision of access to competitor information had a significant positive effect on the strength of subjects' overall preference ($F_{2,198} = 14.20$, $p < 0.001$). Based on planned contrasts tests, all pair-wise mean differences for the *PA-yes/high* ($M = +4.13$), *PA-yes/low* ($M = -0.91$), and *PA-no* ($M = -7.45$) are significant at $p < 0.01$. The mean responses for the *high-* ($M = +1.60$) versus *low-search costs* ($M = -4.75$) conditions also significantly differ from each other ($F_{1,198} = 13.01$, $p < 0.001$). However, the interaction between the provision of access to competitor information and the cost of independent search is not significant ($F_{2,198} = 0.56$, $p > .50$). The adjusted R^2 is 0.163. The mean responses to the relative strength of preference measure are provided in Figure 29.

Figure 29: Relative Strength of Overall Preference for the Focal Travel Agent – Phase 1 (Study 5)



To test whether the effect of the provision of access to competitor information on consumer preference is mediated by the level of perceived trustworthiness and by the amount of independent search, each variable was added as covariates in the ANOVA model, both individually and simultaneously. Results indicate a highly significant effect of the level of perceived trustworthiness on the relative strength of consumers' preference ($F_{1,197} = 6.89$, $p < 0.01$). However, the effect of the provision of access to competitor information is still statistically significant ($F_{2,197} = 6.31$, $p < 0.01$), and removing it from the model reduces the adjusted R^2 value from 0.188 to 0.162. While this fails to support the predicted mediation effects, the partial η^2 value for the provision of access variable is reduced from 0.125 in the model that does not account for the level of perceived trustworthiness to 0.060 in the model that accounts for variability due to this covariate. Thus, it would appear that the level of perceived trustworthiness partially mediates the effects of providing access to competitor information on the strength of their choice.

I now examine the mediation effects of the two measures of the amount of independent search: (1) the number of competitor websites visited, and (2) the percentage of total search time spent independently searching competitor websites. In addition to testing the effects of each measure of amount of search, I will also examine the effects on relative strength of preference when both the level of perceived trustworthiness and each of the following measures are simultaneously added to the original model as covariates..

1) Number of competitor websites visited: When added as a covariate in the model, the number of competitor websites visited significantly reduced the strength of subjects' preferences ($F_{1,197} = 8.52$, $p < 0.01$). However, the provision of access to competitor information variable remained statistically significant ($F_{2,197} = 5.34$, $p < 0.01$), and removing this variable from the model reduces the adjusted R^2 from 0.194 to 0.168. The partial η^2 value for the provision of access to competitor information variable is reduced from 0.125 in the model that does not account for variability due to the number of competitors searched to 0.051 in the model that does account for such variability. Thus, it would appear the number of competitors' websites visited partially mediates the effects of providing access on the strength of their choice.

In a follow-up ANOVA, both the level of perceived trustworthiness and the number of competitor websites visited were simultaneously added as covariates. Higher levels of perceived trustworthiness ($F_{1,196} = 7.19$, $p < 0.01$) and lower numbers of competitor websites visited ($F_{1,196} = 8.80$, $p < 0.01$) were found to significantly increase subjects' relative strength of preference. When both variables are simultaneously added to the model, the effect of the provision of access to competitor information is no longer statistically significant ($F_{1,196} = 2.02$, $p > 0.10$), and removing this variable from the

model actually slightly increases the adjusted R^2 from 0.219 to 0.226 indicating that the effect of providing access to competitor information on the relative strength of preference is mediated by the level of perceived trustworthiness and the amount of independent search.

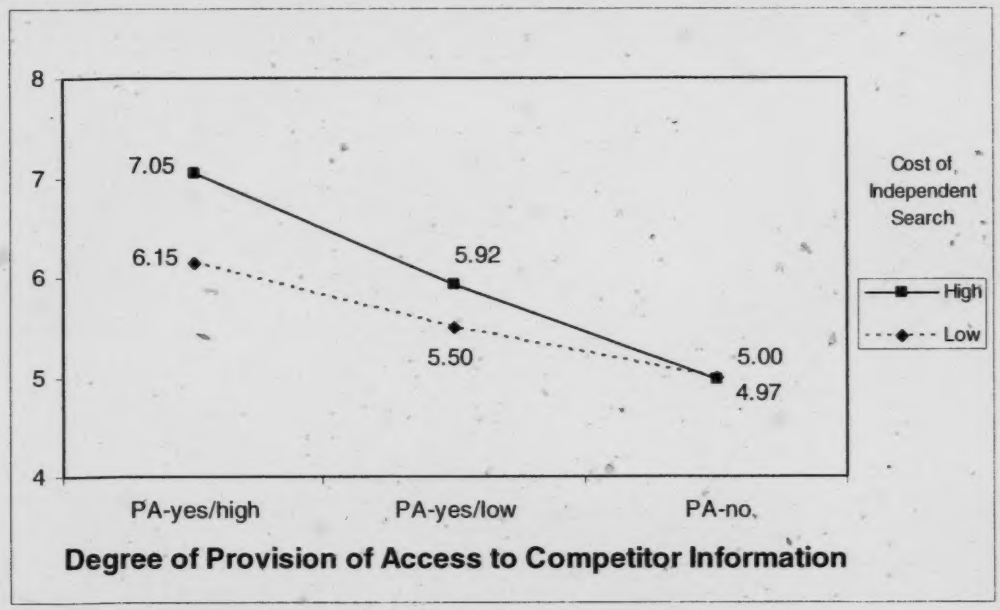
2) Percentage of total search time spent independently searching competitor websites: When added as a covariate in the model, the percentage of total search time spent independently searching competitor websites was found to significantly reduce subjects' relative strength of preference ($F_{1,197} = 4.54$, $p < 0.05$). In addition, the provision of access variable was no longer statistically significant ($F_{1,197} = 2.22$, $p > 0.10$), and removing this variable slightly increases the adjusted R^2 value from 0.178 to 0.180. Thus, it would appear the percentage of total search time spent independently searching competitor information mediates the effect of providing access to competitor information on relative strength of preference.

An ANOVA model in which both the level of perceived trustworthiness and the percentage of total search time spent independently searching competitor websites were simultaneously added as covariates indicates that higher levels of perceived trustworthiness ($F_{1,196} = 6.25$, $p < 0.01$) and a lower percentage of total search time spent independently searching competitor websites ($F_{1,196} = 3.92$, $p < 0.05$) significantly increase subjects' relative strength of preference. Furthermore, the effect of the provision of access to competitor information is no longer statistically significant ($F_{1,196} = 0.85$, $p > 0.42$), and removing this variable from the model slightly increases the adjusted R^2 from 0.200 to 0.215, indicating that the effect of providing access to competitor

information on subjects' relative strength of preference is mediated by the two covariates in the model.

Stated Preference: An ANOVA model was run to test the hypothesized effects on the likelihood-based measure of preference which included the full effects of (1) the provision of access to competitor information, (2) the cost of independent search, and (3) the order in which subjects were exposed to the comparative outcomes. The provision of access to competitor information significantly affected subjects' stated preference for the focal travel agent ($F_{2,198} = 22.54$, $p < 0.001$). Based on planned contrasts tests, all pair-wise mean differences for the *PA-yes/high* ($M = 6.64$), *PA-yes/low* ($M = 5.72$), and *PA-no* ($M = 4.99$) are significant at $p < 0.001$. The mean responses for the *high-* ($M = 6.00$) versus *low-search costs* ($M = 5.56$) conditions also significantly differ from each other ($F_{1,198} = 4.76$, $p < 0.05$), but the interaction between these two variables is not significant ($F_{2,198} = 1.84$, $p > .10$). The adjusted R^2 of this model is 0.202. (see Figure 30).

Figure 30: Stated Preference for the Focal Travel Agent - Phase 1 (Study 5)



To test whether the effect of the provision of access to competitor information on preference is mediated by the level of perceived trustworthiness and by the amount of external information search undertaken, these variables were added as covariates in the ANOVA model, both individually and simultaneously. Results indicate a highly significant effect of the level of perceived trustworthiness on stated preference ($F_{1,197} = 71.67$, $p < 0.001$). However, the effect of the provision of access to competitor information is still statistically significant ($F_{2,197} = 4.36$, $p < 0.05$), but the partial η^2 value for this variable is reduced from 0.185 in the model that does not account for variability due to the level of perceived trustworthiness to 0.041 in the model that does. As well, removing the provision of access to competitor information variable from the model only reduces the adjusted R^2 value from 0.412 to 0.396. Thus, it would appear that the level of perceived trustworthiness partially mediates the effects of providing access to competitor information on subjects' stated preferences.

When added as a covariate in the model, the percentage of total search time spent independently searching competitor websites significantly reduce subjects' stated preference for the focal travel agent ($F_{1,197} = 5.16$, $p < 0.05$). However, the provision of access to competitor information remains statistically significant ($F_{2,197} = 4.60$, $p < 0.01$), but the partial η^2 value for this variable is reduced from 0.185 in the model that does not account for variability due to the level of perceived trustworthiness to 0.045 in the model that accounts for variability due to the proportion of time spent viewing competitor websites. Removing the provision of access to competitor information variable from the model reduces the adjusted R^2 from 0.219 to 0.179. Thus, it would appear the number of

competitors' websites visited partially mediates the effects of providing access to competitor information on stated preference.

An ANOVA model, in which both the level of perceived trustworthiness and the percentage of total search time spent independently searching competitor websites were simultaneously added as covariates, indicates that higher levels of perceived trustworthiness ($F_{1,196} = 70.05$, $p < 0.001$) and a lower percentage of time independently searching competitor websites ($F_{1,196} = 4.19$, $p < 0.05$) significantly increase subjects' stated preference for the focal travel agent. Furthermore, the effect of the provision of access to competitor information is no longer statistically significant ($F_{2,196} = 0.50$, $p > 0.60$), and removing it from the model slightly increases the adjusted R^2 from 0.421 to 0.424. Consistent with prediction, the effect of providing access to competitor information on stated preference is mediated by the two covariates in the model.

5.3: Discussion – Phase 1

The results of Phase 1 of this study provide strong support for the hypothesized effects. First, consistent with previous studies, the provision of access to competitor information was found to enhance the level of perceived trustworthiness of the focal firm and reduce the amount of external information search in which consumers engaged (in terms of both time and quantity measures). Furthermore, the predicted positive relationship between the provision of access to competitor information and consumer preference was found to be mediated by both the level of perceived trustworthiness of the firm and the amount of external information search in which consumers engage.

This study also supports the hypothesis that the cost of independent search moderates the relationship between the provision of access to competitor information and the level of perceived trustworthiness of the firm such that the effect is strongest when search costs are *high* rather than *low*. In addition, the benchmark finding that higher independent search costs leads to a reduction in the amount of independent search undertaken was supported.

The sustainability of the effects of providing access to competitor information on consumer preferences has not been adequately addressed up to this point. Phases 2 and 3 of this experiment were designed to provide a preliminary investigation of whether or not the positive benefits to the firm providing access to competitor information could be maintained even in situations in which the firm no longer provided such comparative information. The data obtained in Phases 2 and 3 of this study (see previous section for description of tasks) provide some encouraging findings related to the sustainability of these effects.

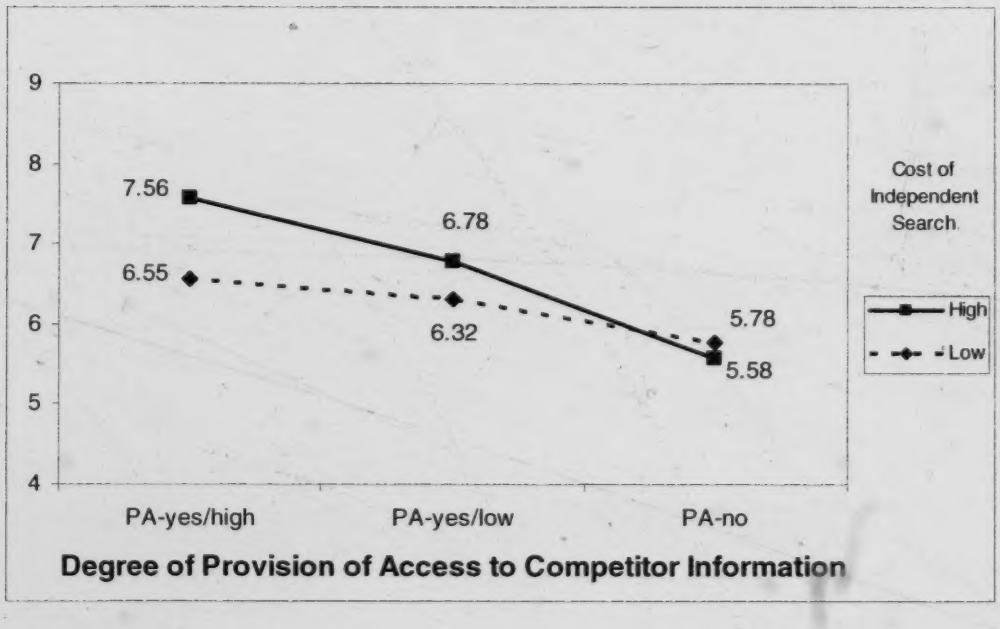
5.4: Results – Phases 2 and 3

Perceived Trustworthiness

In this section, I examine the sustainability of the effects of providing access to competitor information on perceived trustworthiness when the provision of such access was systematically removed. Upon completion of their searches in Phases 2 and 3, subjects were once again asked to respond to a short questionnaire, containing the same measure of perceived trustworthiness collected after Phase 1. Once again, a model was run that included the full effects of (1) the provision of access to competitor information,

(2) the cost of independent information search, and (3) the order in which subjects were exposed to the comparative outcomes. An ANOVA revealed a significant main effect of the initial provision of access to competitor information ($F_{2,198} = 21.31$, $p < 0.001$). Based on planned contrasts tests, all pair-wise mean differences for the *PA-yes/high* ($M = 7.10$), *PA-yes/low* ($M = 6.57$), and the *PA-no* ($M = 5.72$) are significant at $p < 0.01$, even though the focal travel agent provided only partial information about its competitors in Phase 2 and none in Phase 3. The main effect of search costs was also significant ($F_{1,198} = 5.55$, $p < 0.05$), as subjects in the *high-search costs* ($M = 6.66$) condition rated the focal retailer as significantly more trustworthy than subjects in the *low-search costs* ($M = 6.25$). Finally, the positive effect of the provision of access to competitor information on the level of perceived trustworthiness of the firm was strongest when the cost of independent search was high rather than low ($F_{2,198} = 5.02$, $p < 0.01$) (see Figure 31).

Figure 31: Perceived Trustworthiness of the Focal Travel Agent – Final Overall (Study 5)



At first glance, it appears that the magnitude of these effects diminished, as noted by the reduction in the R^2 value from 0.256 in the first measure to 0.198 for this one. In order to test for significant differences in the perceived trustworthiness from Phase 1 to the final measure, the mean responses to these measures were entered in a repeated measures ANOVA as a within-subject factor. The between-subjects variables were identical to the ANOVA previously reported. Results of this analysis reveal no significant difference in responses across the two questionnaires ($F_{1,198} = 0.046$, $p > 0.8$), nor was the interaction between this variable and the provision of access significant ($F_{2,198} = 1.41$, $p > 0.20$). Furthermore, the main effect of providing access to competitor information in Phase 1 remained significant ($F_{2,198} = 27.44$, $p < 0.001$), suggesting that the systematic removal of the provision of access did not adversely affect the level of perceived trustworthiness.

Independent Search

In this section, I examine the effects of the degree to which the firm originally provided access to its competitors and the cost of external information search on the number of competitor websites visited and the percentage of search time subjects spent independently searching competitor websites.

Number of competitor websites visited: In Phase 2 of the experiment, six new competitors were added to the list that subjects could independently search. The focal agent did not provide any access to these new regional competitors, but did provide access to the original five. A repeated measures ANOVA was run to test the effects of (1) the provision of access to competitor information (i.e., the initial degree to which the focal firm provided such access during Phase 1), (2) the cost of independent search, and

(3) the order in which subjects were exposed to comparative outcomes on the number of websites visited. As in Phase 1, this model will test for differences between the first and second destination searches by including destination as a within-subject variable.

Consistent with the results in Phase 1, higher initial levels of provision of access to competitor information significantly reduced the number of competitor websites visited during Phase 2 ($F_{2,198} = 27.32$, $p < 0.001$). Higher search costs also resulted in a significant reduction in the number of competitor websites visited ($F_{1,198} = 56.11$, $p < 0.001$), and the interaction between these two variables is marginally significant ($F_{1,198} = 2.62$, $p = 0.07$). Subjects' amount of independent search also varied across the two destinations, as indicated by a highly significant main effect of destination ($F_{1,198} = 140.60$, $p < 0.001$). However, since the interaction between destination and the provision of access to competitor information was not significant ($F_{2,198} = 1.66$, $p > 0.15$), follow-up univariate tests were not performed. The mean numbers of websites visited for each destination are shown in Figures 32 and 33.

Figure 32: Number of Competitor Websites Visited During the First Destination Search – Phase 2 (Study 5)

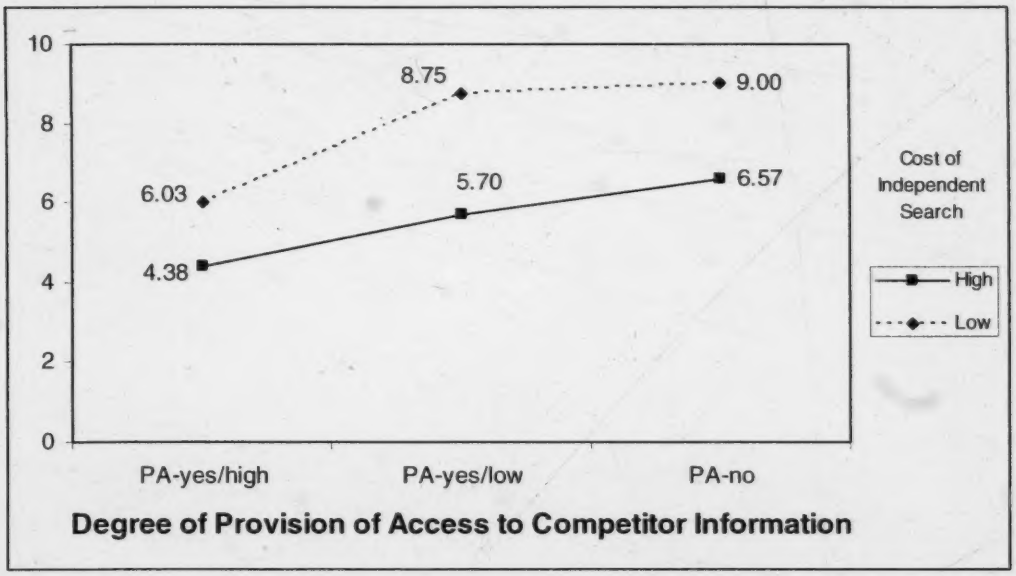
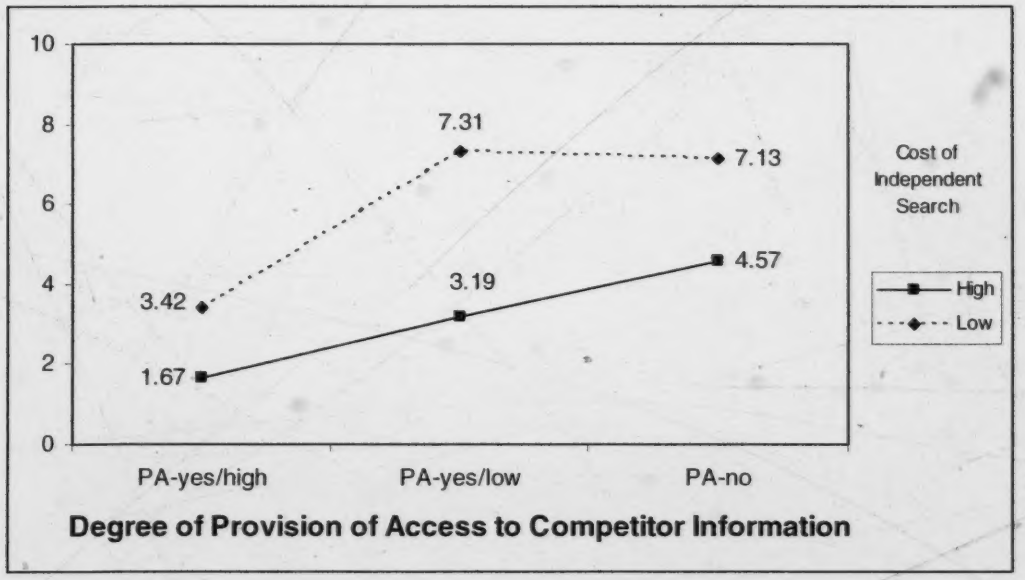


Figure 33: Number of Competitor Websites Visited During the Second Destination Search – Phase 2 (Study 5)



In Phase 3, subjects were asked to make two choices for destinations in Costa Rica. Regardless of the initial degree to which the focal travel agent provided access to competitor information, no competitor information was provided by the focal travel agent during this phase. A repeated measures ANOVA was run to test the effects of (1) the provision of access to competitor information (i.e., the initial degree to which the focal firm provided such access during Phase 1), (2) the cost of independent search, and (3) the order in which subjects were exposed to comparative outcomes on the number of websites visited. As in Phases 1 and 2, this model will test for differences between the first and second destination searches by including destination as a within-subject variable.

Even when the focal travel agent provided no access to competitor information, the degree to which it provided access during Phase 1 significantly influenced the number of competitor websites visited during phase 3 ($F_{2,198} = 3.15$, $p < 0.05$). As expected, higher search costs also significantly lowered the amount of external information search undertaken ($F_{1,198} = 82.50$, $p < 0.001$). The interaction between the provision of access and search costs was non-significant. Subjects' amount of independent search varied across the two destinations, as indicated by a highly significant main effect of destination ($F_{1,198} = 11.57$, $p < 0.001$). However, since the interaction between destination and the provision of access to competitor information was not significant ($F_{2,198} = 0.28$, $p > 0.75$), follow-up univariate tests were not performed. The mean numbers of competitor websites visited for each destination are provided in Figures 34 and 35.

Figure 34: Number of Competitor Websites Visited During the First Destination Search – Phase 3 (Study 5)

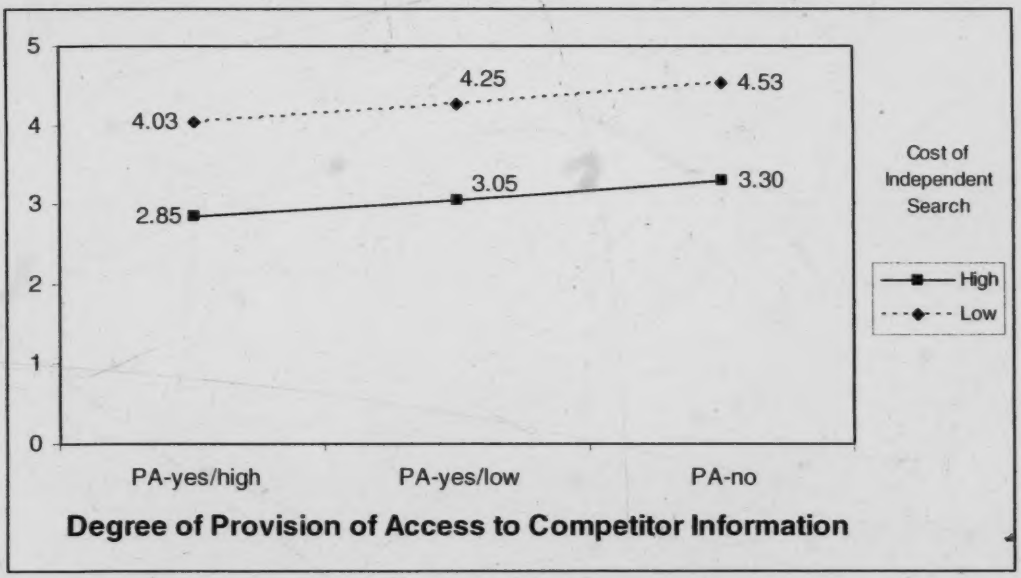
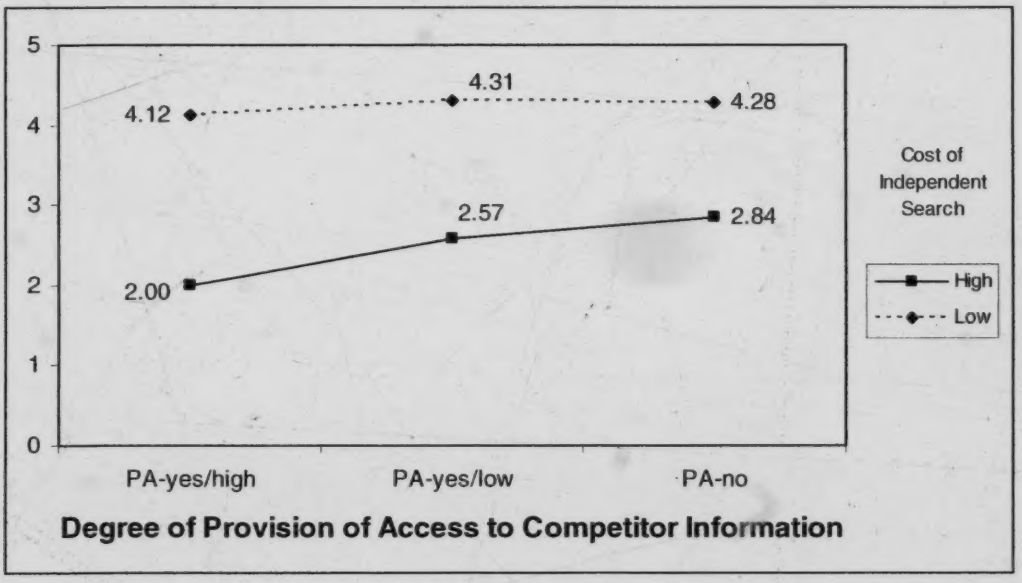


Figure 35: Number of Competitor Websites Visited During the Second Destination Search – Phase 3 (Study 5)



Time Measures: A repeated measures ANOVA was run to test the effects of (1) the provision of access to competitor information (i.e., the initial degree to which the focal firm provided such access during Phase 1), (2) the cost of independent search, and (3) the order in which subjects were exposed to comparative outcomes on the percentage of total search time subjects spent independently searching competitor websites. Once again, this model will test for differences between the first and second destination searches by including destination as a within-subject variable.

Higher initial levels of provision of access to competitor information significantly reduced the percentage of search time subjects spent independently searching competitor websites ($F_{2,198} = 97.89$, $p < 0.001$). As expected, higher search costs also significantly lowered the time spent viewing competitor sites ($F_{1,198} = 14.13$, $p < 0.001$), and the marginally significant interaction effect between the provision of access and search costs ($F_{2,198} = 2.66$, $p = 0.07$) indicates that the gains in terms of search reduction are largest in the *FC-yes/low* condition (see Figures 36 and 37).

Figure 36: Percentage of Total Search Time Spent Independently Searching Competitor Websites During the First Destination Search – Phase 2 (Study 5)

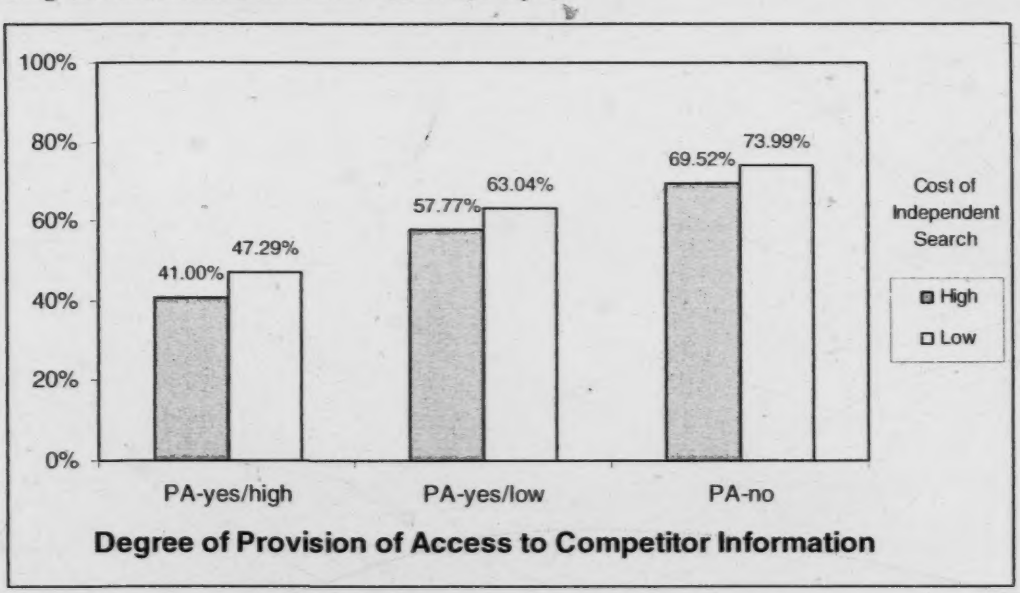
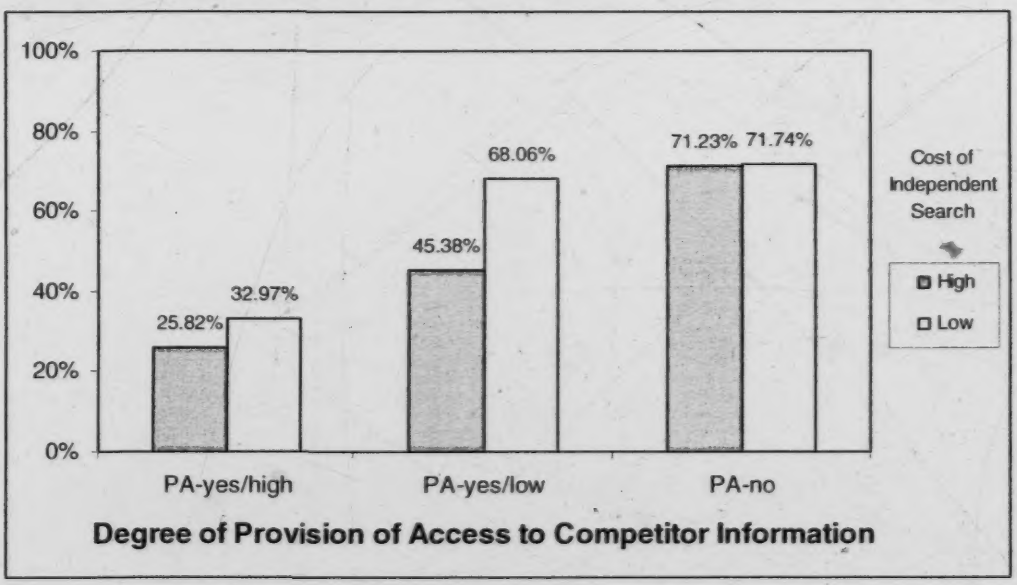


Figure 37: Percentage of Total Search Time Spent Independently Searching Competitor Websites During the Second Destination Search – Phase 2 (Study 5)



Results also reveal a significant difference in the time spent viewing competitor sites between the first and second Cuban destination as indicated by both a significant

main effect of destination ($F_{1,198} = 18.26$, $p < 0.001$) and a significant interaction between destination and the provision of access to competitor information ($F_{2,198} = 9.27$, $p < 0.001$). Univariate ANOVA models for each destination revealed that the provision of access to competitor information significantly reduced the percentage of total search time subjects spent independently searching competitor websites in both the first ($F_{2,198} = 52.36$, $p < 0.001$), and the second ($F_{2,198} = 78.88$, $p < 0.001$) destination searches. As expected, higher search costs also reduced this measure of search in both the first ($F_{1,198} = 5.76$, $p < 0.01$) and second ($F_{1,198} = 78.88$, $p < 0.001$) destination searches. Finally the interaction between these two constructs is also significant in the second ($F_{2,198} = 5.58$, $p < 0.01$) but not in the first ($F_{2,198} = 0.04$, $p > 0.90$) search.

A similar analysis was conducted on this measure of search during Phase 3 of the experiment. Results indicate that the effect of providing access to competitor information is highly significant ($F_{2,198} = 6.48$, $p < 0.01$). Higher search costs also significantly reduce the percentage of total search time spent independently searching competitor websites ($F_{1,198} = 9.25$, $p < 0.01$). However, there is no significant interaction between these two variables ($F_{2,198} = 0.65$, $p > 0.50$) and no significant difference in the results between the first and second destinations ($F_{1,198} = 1.71$, $p > 0.01$). Therefore, follow-up univariate tests for each destination were not performed. The mean percentages of total search time spent independently searching competitor websites for each destination are provided in Figures 38 and 39.

Figure 38: Percentage of Total Search Time Spent Independently Searching Competitor Websites During the First Destination Search – Phase 3 (Study 5)

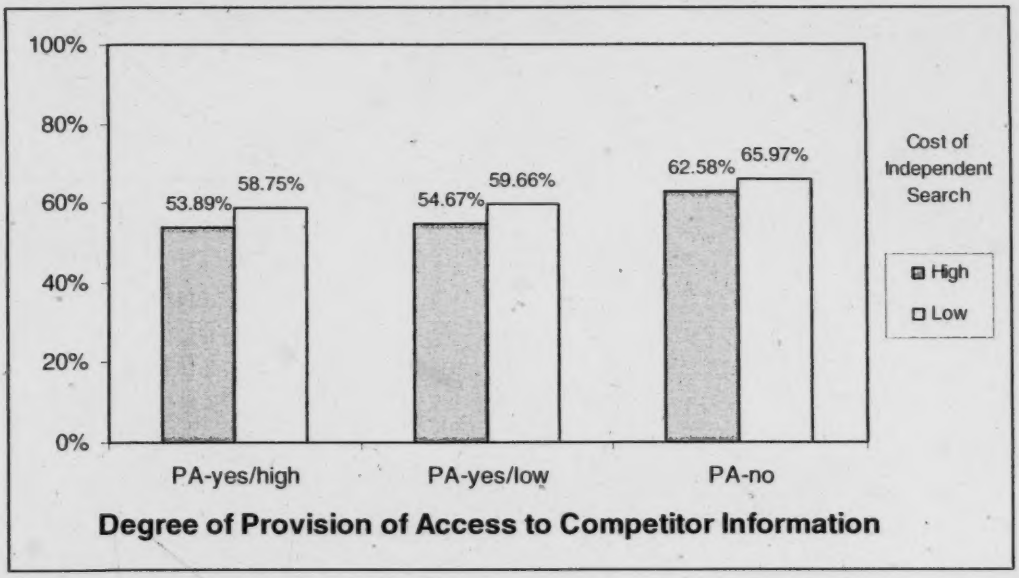
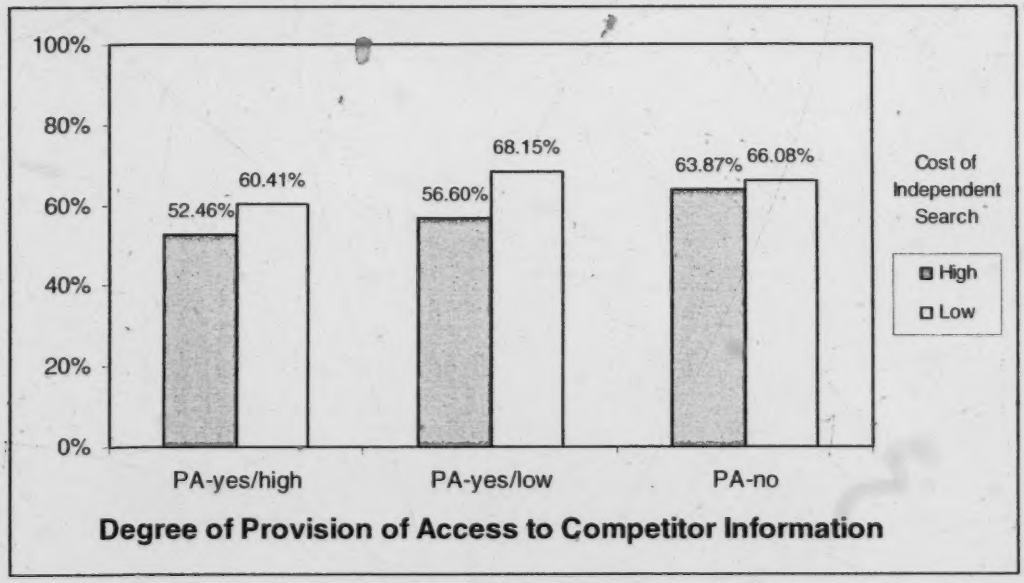


Figure 39: Percentage of Total Search Time Spent Independently Searching Competitor Websites During the Second Destination Search – Phase 3 (Study 5)



While these results offer encouraging evidence as to the sustainability of the effects of providing access to competitor information on reducing the amount of external

information search, one caveat needs to be mentioned. The magnitude of these effects decreases considerably from the initial phase to the latter ones, as evident by the sharp reduction in several of the R^2 values associated with the models run during the follow-up phases of this experiment. However, thus far the results as to the sustainability of the effects of providing access are encouraging in that the latter stages of this experiment support the sustainability of the effects on both mediating variables – the level of perceived trustworthiness of the focal agent and the amount of external information search in which consumers actively engage. In the next section, I will examine whether or not the sustainability of these effects extends to measures of consumer preference.

Preference

In this section, I will examine the mediating effects of both the level of perceived trustworthiness and the amount of external search simultaneously for each measure of consumer preference.

Destination-specific choice: The effects of the provision of access to competitor information do not appear to be sustainable in terms of individual destination choices. While the overall effect of providing access to competitor information on destination choices for Cuba is significant (Wald = 6.63, $p < 0.05$), results of the contrasts revealed no significant differences between the probability of choosing the focal agent between either the *PA-yes/high* versus *PA-yes/low* or between the *PA-yes/low* versus *PA-no* conditions. The overall effect of the provision of such access on the probability of choosing the focal retailer during the Costa Rican destination choices was also non-significant. Furthermore, neither the cost of independent search, nor its interaction with

the provision of access to competitor information had any effect on the probability of choosing the focal retailer in either the Cuban or Costa Rican destination choices.

Overall Choice: The degree to which the focal firm provided access to competitor information did, however, have a significant effect on overall choice in Phases 2 and 3. In Phase 2, logistic regression analysis indicates that the percentage of subjects choosing the focal agent in the *PA-yes/high* (44.44%), *PA-yes/low* (33.33%), and *PA-no* (23.19%) conditions were significantly different from each other and in the expected direction (Wald = 7.06, $p < 0.05$). However, while the overall effect is significant, the contrasts for each parameter estimate reveal that neither differences in choice probabilities between the *PA-yes/high* and *PA-yes/low* levels ($\beta = 0.68$, Wald = 2.53, $p > 0.11$) nor the differences between the *PA-yes/low* and *PA-no* levels ($\beta = 0.37$, Wald = 0.62, $p > 0.43$) were significant. As expected, higher independent search costs also positively influenced subjects' overall choice ($\beta = 0.92$, Wald = 6.74, $p < 0.01$). The adjusted R^2 of this model is 0.164.

In Phase 3, the percentage of subjects choosing the focal agent in the *PA-yes/high* (52.78%), *PA-yes/low* (34.78%), and *PA-no* (18.84%) were significantly different from each other in the expected direction (Wald = 15.63, $p < 0.001$). The contrasts for each parameter estimate reveal that this overall effect is driven primarily by the differences in choice probabilities between the *PA-yes/high* and *PA-yes/low* levels ($\beta = 0.96$, Wald = 5.21, $p < 0.05$). The difference between the *PA-yes/low* and *PA-no* levels was non-significant ($\beta = 0.72$, Wald = 2.13, $p > 0.14$). As expected, higher independent search costs also positively influenced subjects' overall choice ($\beta = 1.31$, Wald = 12.58,

$p < 0.001$). The R^2 is 0.180. Choice shares of the focal travel agent for Phases 2 and 3 are provided in Figures 40 and 41.

Figure 40: Choice Share of the Focal Travel Agent for Overall Agent Choice – Phase 2 (Study 5)

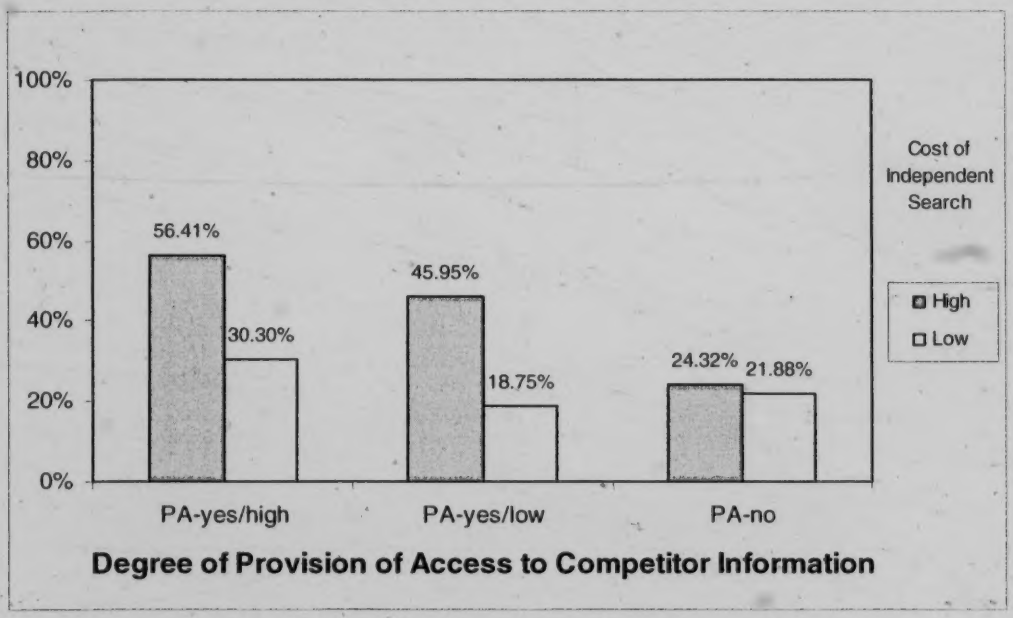
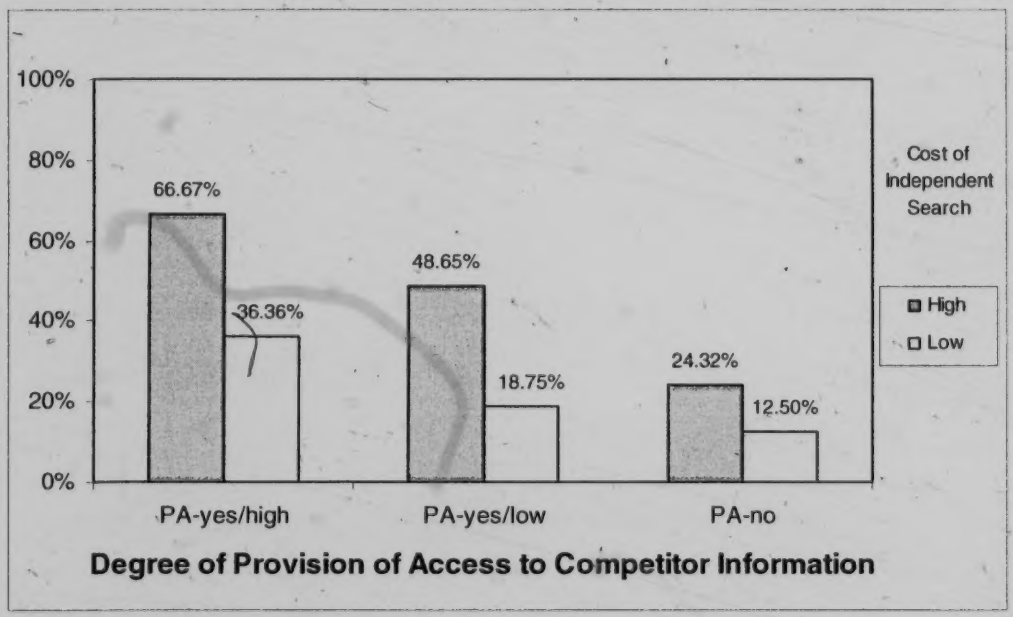


Figure 41: Choice Share of the Focal Travel Agent for Overall Agent Choice – Phase 3 (Study 5)



To test whether these effects are mediated by the level of perceived trustworthiness and by the number of competitor sites searched, the variables were added as covariates in the logistic regression models simultaneously. Higher levels of perceived trustworthiness significantly increased the probability of choosing the focal firm in both the second phase ($\beta = 0.44$, Wald = 8.77, $p < 0.01$) and the third phase ($\beta = 0.59$, Wald = 13.97, $p < 0.001$). Furthermore, the overall effect of providing access to competitor information was no longer significant in either Phase 2 (Wald = 1.07, $p > 0.58$) or Phase 3 (Wald = 4.65, $p > 0.09$), and removing this variable from the models resulted in a reduction in the adjusted R^2 values from 0.203 to 0.144 in Phase 2 and 0.246 to 0.223 in Phase 3. However, the effect of adding the number of competitor sites searched as a covariate was significant in neither Phase 2 ($\beta = -0.01$, Wald = 0.13, $p > 0.70$) nor Phase 3 ($\beta = -0.59$, Wald = 0.72, $p > 0.35$).

Similar results were observed when the percentage of total search time spent independently searching competitor sites was used as a covariate along with the level of perceived trustworthiness. Higher levels of perceived trustworthiness significantly increased the probability of choosing the focal firm in both the second phase ($\beta = 0.44$, Wald = 8.83, $p < 0.01$) and the third phase ($\beta = 0.59$, Wald = 13.74, $p < 0.001$). Furthermore, the overall effect of providing access to competitor information was no longer significant in either Phase 2 (Wald = 1.07, $p > 0.58$) or Phase 3 (Wald = 4.01, $p > 0.13$), but removing this variable from the models resulted in reductions in the adjusted R^2 value from 0.202 to 0.144 in Phase 2 and 0.252 to 0.233 in Phase 3. In addition, the effect of amount of search was not significant in either Phase 2 ($\beta = -0.09$, Wald = 0.01, $p > 0.90$) or Phase 3 ($\beta = -2.04$, Wald = 2.44, $p > 0.10$).

Relative Strength of Preference: An ANOVA reveals no significant effects of either the provision of access to competitor information or the cost of search in Phase 2. Furthermore, while the overall effect of providing access to competitor information on subjects' relative strength of preference is significant in Phase 3 ($F_{2,198} = 3.85$, $p < 0.05$), the adjusted R^2 for this model is only 0.018 indicating that the model accounts for very little of the variance associated with this measure. Overall, the results from the relative strength of preference measure do not support the sustainability of the effects of providing access to competitor information in situations in which the provision of such comparisons is no longer present.

Stated Preference: The provision of access to competitor information was found to have a significant and positive effect on subjects' stated preference for the focal firm. An ANOVA, which included the full effects of (1) the provision of access to competitor information, (2) the cost of independent search, and (3) the order in which subjects were exposed to the comparative outcomes, reveals a highly significant main effect of the provision of access to competitor information on the likelihood-based measure of preference in both Phase 2 ($F_{2,198} = 8.45$, $p < 0.001$) and Phase 3 ($F_{2,198} = 7.63$, $p < 0.001$) of the experiment. Higher independent search costs also increased subjects' stated preference for the focal travel agent in Phase 3 ($F_{1,198} = 4.81$, $p < 0.05$), but were not significant in Phase 2 ($F_{1,198} = 0.92$, $p > 0.30$). The interaction between these two variables was also non-significant in either phase. The adjusted R^2 values for these models were only 0.113 and 0.091, respectively, indicating that the models account for very little of the variance. This is also a substantial reduction from the adjusted R^2 value

of Phase 1. The mean responses to the likelihood-based measure of preference for Phases 2 and 3 are provided in Figures 42 and 43.

Figure 42: Stated Preference for the Focal Travel Agent – Phase 2 (Study 5)

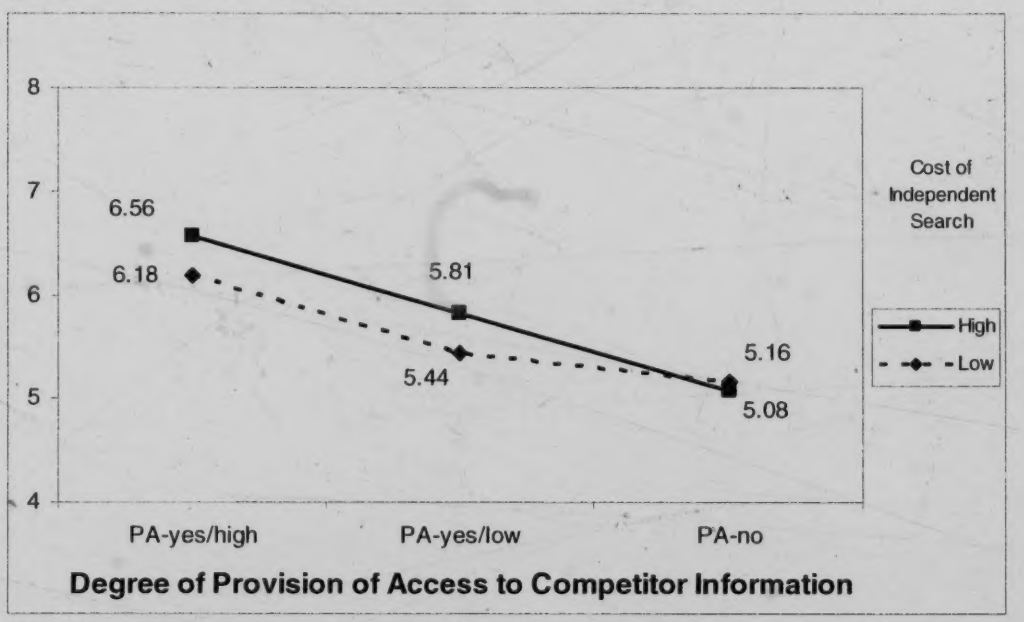
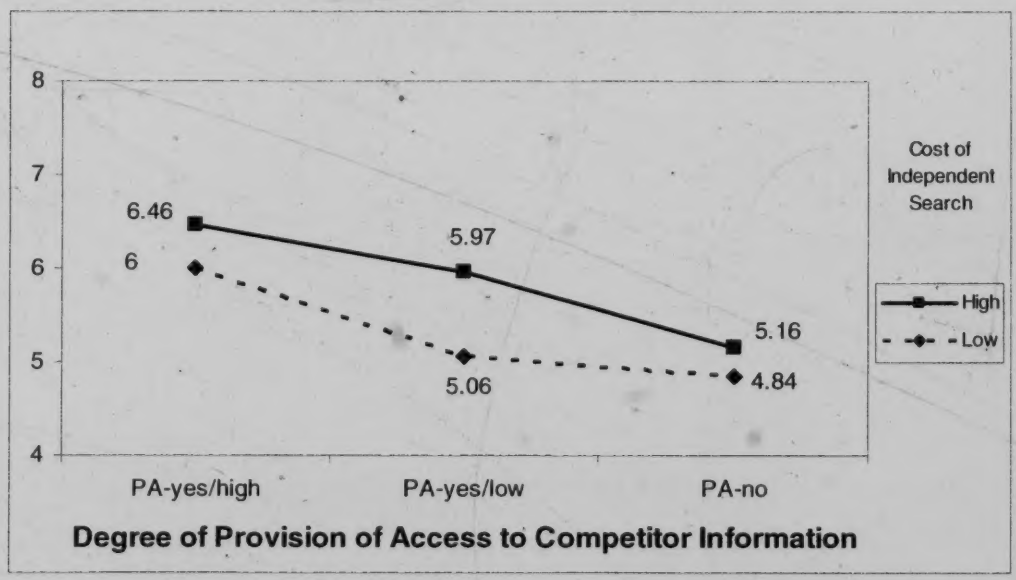


Figure 43: Stated Preference for the Focal Travel Agent – Phase 3 (Study 5)



To test whether this effect is mediated by the level of perceived trustworthiness and by the amount of external information search undertaken, both variables were simultaneously added as covariates. Higher levels of perceived trustworthiness ($F_{1,196} = 50.14$, $p < 0.001$) and a lower number of competitor sites viewed ($F_{1,196} = 4.96$, $p < 0.05$) were found to significantly increase subjects' stated preference for the focal agent in Phase 2. Similar results were observed in Phase 3, where higher levels of perceived trustworthiness ($F_{1,196} = 65.49$, $p < 0.001$) and a lower number of competitor sites viewed ($F_{1,196} = 3.39$, $p < 0.05$ 1-tailed) significantly increased subjects' stated preference for the focal agent. Furthermore, the effect of the provision of access to competitor information is no longer statistically significant in either Phase 2 ($p > 0.84$) or Phase 3 ($p > 0.65$), and removing this variable from the models only reduces the adjusted R^2 values from 0.305 to 0.295 for the Cuban phase and from 0.324 to 0.319 for the Costa Rican phase. This indicates that the effect of providing access to competitor information on stated preference is mediated by the level of perceived trustworthiness and the number of competitor websites visited.

Similar results were obtained when the percentage of total search time spent independently searching competitor websites was used as the measure of amount of information search. Higher levels of perceived trustworthiness ($F_{1,196} = 47.69$, $p < 0.001$) and a smaller percentage of search time spent at competitor websites ($F_{1,196} = 5.46$, $p < 0.05$) were found to significantly increase subjects' stated preference for the focal agent in Phase 2. In Phase 3, higher levels of perceived trustworthiness ($F_{1,196} = 65.11$, $p < 0.001$) significantly increased subjects' stated preference for the focal agent, but the effects of search time was non-significant ($p > 0.54$). Furthermore, the effect of the

provision of access to competitor information is no longer statistically significant in either Phase 2 ($p > 0.70$) or Phase 3 ($p > 0.58$) of the experiment. Removing this variable from the models only reduces the adjusted R^2 values from 0.308 to 0.298 for Phase 2 and from 0.313 to 0.311 for Phase 3, indicating that the effect of providing access to competitor information on stated preference is mediated by the level of perceived trustworthiness and the proportion of search time spent at competitor websites.

5.5: Discussion – Phases 2 and 3

Initial findings from this study related to the sustainability of the effects of providing access to competitor information are encouraging. First, in relation to the two mediating variables, the level of perceived trustworthiness and the amount of external information search undertaken, the degree to which the focal firm provided access to competitor information in Phase 1 still appeared to exert a positive influence on these two intervening variables in Phases 2 and 3. While the size of this effect is small relative to that of Phase 1, significant results were still obtained for both measures in both of the follow-up phases during which the provision of access was systematically removed.

However, the results as to the sustainability of the effects of providing access to competitor information on consumer preference were somewhat mixed across the various measures of consumer preference. Strong support for the sustainability of these effects, as well as the predicted mediation effects, was found for two of the four measures of consumer preference, namely the overall choice measure and the stated preference measure. Neither the effects pertaining to individual destination choices nor the strength of subjects' overall choice appear to be sustainable.

5.6: General Discussion of Study 5

This chapter explored an important aspect of the effects of providing access to competitor information, namely its effects on external search and subsequent preference. Consistent with Studies 1 – 4, this study provided strong support for the hypotheses that the provision of access would positively influence the level of perceived trustworthiness (H_1) and consumer preference (H_2). In addition, strong support for the positive relationship between the level of perceived trustworthiness and consumer preference (H_3) was also found. Taken together these results indicate that the provision of access to competitor information has an indirect and positive effect on consumer preference that is mediated by the level of perceived trustworthiness of the firm.

In addition to these previously identified effects, this study also found substantial support for the moderating role of the cost of independent search in the relationship between the provision of access to competitor information and the level of perceived trustworthiness (H_5). As predicted, the magnitude of the positive effects of providing access to competitor information on the level of perceived trustworthiness increased as the cost of independent search increased. Taken together, the above mentioned results provide substantial evidence to support the conceptualization of the provision of access as an important signal of trust. That is, the *act* of providing access to competitor information is an important market signal that consumers employ in their decision making process.

In addition to the attribution-based effects of providing access to competitor information, this study addresses several hypotheses related to the information-based component of this variable. Consistent with prediction, the provision of access to competitor information significantly lowered the amount of independent search

undertaken (H_7). This result was consistent across multiple measures of consumer search. Furthermore, the magnitude of this negative effect of providing access to competitor information on the amount of consumers' independent search increased as the cost of external information search increased (H_8). The amount of consumers' external information search was hypothesized to have a negative effect on consumer preference for the focal firm (H_9). This study provided strong evidence in support of this prediction. Taken together, H_7 and H_9 represent the prediction that providing access to uncensored competitor information has an indirect and positive effect on consumer preference that is mediated by the amount of independent search in which consumers engage. This mediating relationship was supported across several measures of consumer preference.

Results of this study also provided some preliminary evidence that the effects of providing access to competitor information may not be purely situational, and can carry over into future purchase encounters. While the magnitude of the effects found in Phases 2 and 3 of this experiment were small compared to those found in Phase 1, significant results were still obtained in terms of the effects of providing access on perceived trustworthiness, amount of independent search, and consumer preference. By building strong levels of trust during initial contact with customers, firms may be better able to sustain those relationships in future encounters, even in the absence of the trust signal.

Chapter 6: Summary and Conclusions

This dissertation examines the conditions under which it may be beneficial for a firm to provide its customers with direct access to uncensored information about its competitors. In this work, the provision of access to competitor information is conceptualized as a continuous construct, where the comprehensiveness and the accessibility of the competitor information that a firm provides could vary. Comparisons may be facilitated on the basis of a single attribute (e.g., price) or on all relevant dimensions, and for a few or all alternatives available in the marketplace. In the studies discussed in Chapters 3 through 5, various degrees of this provision of access were empirically tested. For example, while the first two studies discussed in Chapter 3 focused only on price comparisons, the nature of the comparative information was expanded for the remainder of the studies to include a number of quality attributes. The degree to which the firm provided such access in terms of how well it represented the marketplace was addressed in Study 5. In addition to manipulating the provision of access as a three-level construct, the degree to which the firm provided access to competitor information was systematically removed in subsequent phases of the study.

Strong evidence in support of the attribution-based effects of providing access to competitor information on consumer preference is provided in this research. Consistent with prediction, the provision of access to competitor information positively influences consumer preference, and this effect is mediated by the level of perceived trustworthiness (Hypotheses $H_1 - H_3$). This result was shown across all five studies. Results obtained in Study 3 demonstrate that, as predicted by H_4, the objective market position of the firm

moderates the relationship between the provision of access to competitor information and perceived trustworthiness. Studies 3 and 4 provide preliminary evidence that the level of decision ambiguity moderates the relationship between the provision of access to competitor information and consumer preference such that this effect is stronger when the level of ambiguity is high rather than low (H_6). However, the differences in the results observed between Studies 3 and 4 suggest a potential enhancement to the conceptual model I tested in this dissertation. That is, decision ambiguity may have differential effects upon the relationship between the provision of access to competitor information and consumer preference, depending on when in the decision making process the ambiguity occurs. Further work is needed to clarify the exact nature of these effects. Finally, strong support for H_5 – the moderating role of the cost of independent search – is found in Study 5.

In this dissertation, evidence in support of the information-based effects of providing access to competitor information on consumer preference is also provided. Study 5 reveals that the provision of access to competitor information drastically reduces the amount of external information search undertaken, thus supporting H_7. Evidence as to the moderating effect of external information search costs (H_8) on this effect is also found in Study 5. Finally, the amount of external information search in which consumers engaged was shown to be negatively related to preference for the firm providing access to competitor information (H_9).

While no formal hypotheses related to the sustainability of these effects over time have been tested in this dissertation, preliminary evidence in support of this occurrence was found in Phases 2 and 3 of Study 5. Under conditions in which the provision of

access to competitor information was systematically removed from the focal travel agent (that initially provided complete access to competitor information), subjects still engaged in less external information search (when search costs were high) and tended to prefer the focal travel agent over its competitors in the marketplace.

The research presented here contributes to several bodies of literature. First, this dissertation contributes to the literature on the role of trust in buyer-seller relationships by demonstrating that the provision of access to competitor information, in uncensored form, can be a promising form of trust-building behavior which firms may use strategically in their efforts to establish successful long-term relationships with their customers. Related to this, this research identifies the provision of access to competitor information as another type of market signal that consumers can use to infer an important, yet unobservable characteristic of the firm – namely its level of trustworthiness. It addresses the implications to firms willing to risk losing a short-term sale in order to build long-term relationships with customers. Managers will be particularly interested in identifying under which conditions deliberately providing consumers with competitor information may be beneficial to the firm. In addition to influencing the design of a firm's online presence (e.g., interactive consumer decision aids), these findings also have implications for other types of firm-consumer interactions such as mass media advertising, point-of-purchase displays, and in-store interactions between salespersons and their customers. For example, a salesperson that provides customers with uncensored comparative information (e.g., a copy of Consumer Reports) about the competitors' products may be perceived as more trustworthy and, therefore, may be more likely to complete the sale, especially when products are comparable across firms.

Another important contribution of this dissertation pertains to the relationship between the provision of access to competitor information and consumer information search. In Study 5, I show that by providing access to competitor information, a firm can induce consumers to engage in less independent search. The provision of such access is a powerful mechanism by which a firm can influence the manner in which consumers' consideration sets and subsequent preferences are formed. The potential for a firm to become the consumers' primary information source may enable the firm to influence which attributes are considered by consumers when making their purchase decisions. For example, the inclusion of certain attributes over others in the comparative information may lead consumers to infer that the included attributes are more important determinants of product quality. Over time, this may enable firms to shape consumer preferences such that the nature of the information ensures that the firm is always preferred to its competitors. However, one caveat exists in that the potential to influence attribute importance by including certain attributes over others in the comparative information can also adversely affect the level of perceived trustworthiness consumers associate with a firm because the comparative information may no longer be considered uncensored or representative of the marketplace.

From a consumer standpoint, it is evident that by providing access to competitor information and thus reducing the information asymmetry in the marketplace, a firm enhances consumer welfare by helping them make more informed decisions. However, contrary to prevailing thought, the results of this dissertation suggest that firms may also greatly benefit by reducing such information asymmetry in the marketplace.

This work also adds to the literature on two-sided persuasion by extending the theories previously developed in that area to an interactive context in which a persuasive message is constructed dynamically in response to a request by the receiver and the specific pieces of information that are presented are not under the sender's control. By adopting a long-term perspective, this research also extends the findings from the two-sided persuasion literature by examining the potential of experience to change the relative importance of the attribution- and information-based components of comparative information in the construction of long-term consumer preferences.

Finally, this dissertation enhances our understanding of consumer behavior in electronic marketplaces in general, and of the process by which shoppers develop a long-term preference for an online vendor in particular. The results obtained from these studies also add to the growing body of research concerned with building trust in the context of online shopping.

In this research, the comparative information was a complete and unbiased representation of current market offerings. Future work should examine how the effects of providing access to competitor information on consumer preference may be affected when the degrees of completeness and bias in the information varies. The findings of this work, in conjunction with those of the comparative advertising literature, would suggest that the inclusion of such a construct in the theoretical model would result in a more generalized theory that would better encompass the findings from the comparative advertising literature.

Future work in this stream of research should further address the issue of the sustainability of these findings. While preliminary evidence from Study 5 suggests that a

firm initially providing access to competitor information may still benefit in future encounters in which no access is provided, future work needs to be undertaken to identify the boundary conditions under which these effects might occur.

Additional research should also examine situations in which multiple competitors in a marketplace provide access to competitor information, and situations in which competitors engage in other types of competitive responses (e.g., price matching policies). Most-important is to identify to what types of competitive responses consumers are likely to respond most favorably, which may relate to the intrusiveness of the competitor's response. For example, in an interactive setting such as the web, competitors may choose to respond by changing their available product offerings. How they relate this information to consumers may fundamentally change the way in which consumers perceive the firm providing access. If a competitor uses a less intrusive approach and relies on the uncensored comparative information to show their offerings as superior, then consumers may perceive the firm providing access as unfavorable relative to its competitors. Thus, this type of competitor response may reduce the overall effectiveness of providing such access. Alternatively, competitors could engage in a more aggressive approach, such as ensuring consumers are exposed to a pop-up advertisement to relay their response. Consumer response to this competitor reaction is likely to be very different than that of the former reaction.

The importance of the order in which consumers are exposed to various comparative incomes is also an area of research that warrants further attention. Across several studies in this dissertation, both the order in which firms were presented (i.e., whether subjects were exposed to the firm providing access to competitor information

before or after its competitors), and the order of the comparative information within the firm providing access (i.e., whether the initial comparison favored the focal firm or its competitor) influenced consumer preference. The exact nature of these effects should be examined in greater detail.

Another avenue of future work relates to the degree of perceived risk associated with the decision making process. Building on the findings that indicate some degree of risk must be present in order for trust to develop, the studies discussed here were designed to involve a moderate to high degree of risk. Future work should be designed to address the specific nature and types of perceived risk likely to enhance the effects of the provision of access to competitor information on consumer preference.

Finally, key limitations of the research presented in this dissertation must also be acknowledged. First, the role of individual difference factors should be examined in future studies, as the specific nature of these effects have not been incorporated into my existing framework. For example, prior knowledge about brands or existing relationships with firms is likely to impact the effectiveness of the provision of access to competitor information. Secondly, the generalizability of these findings should also be tested. While the results of the studies discussed in this dissertation seem to generalize across product categories, more work is needed to test whether these lab results are generalizable to a more heterogeneous population than a student sample.

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Appendix A: Consent Form (Study 1)

Department of Marketing,
Faculty of Business
University of Alberta

Consent Form

I agree to participate in the study being conducted by researchers at the University of Alberta. I realize that I will receive a detailed explanation of the rationale and hypotheses for the study after the study has been completed.

I am aware that the study will take about 30 minutes.

I am aware that I may discontinue my participation in the study at any time without penalty.

I Agree To Participate

Appendix B: Description of Task (Study 1)

Please read the following information carefully. You will not be able to complete the study if you do not fully understand these instructions.

Recently, a large number of internet-based book retailers expanded into the textbook market. A large number of these online bookstores have made an offer to universities and colleges across North America to offer substantial savings to registered students purchasing textbooks. In return, the participating schools would agree to endorse these retailers with direct links from the universities' own home pages. The University of Alberta is contemplating joining in this venture.

The university is considering endorsing 2 or 3 of these online retailers on a trial basis. However, these retailers will only be considered after a careful evaluation from students such as yourselves. You are asked to **carefully** evaluate one of the online booksellers being considered. The true identity of this retailer is being concealed for the purposes of this study. Therefore, the retailer you will be evaluating will be referred to as ***Academic Reads***.

You are asked to search the ***Academic Reads*** website for 8 textbooks. The experimenter has provided you with a list of titles and authors for you to search. After you have completed your search for all textbooks, you will be asked to answer a series of questions pertaining to your overall evaluation of ***Academic Reads***, based on your search experience.

As an additional incentive for you to provide an accurate evaluation, a random draw will be held, where the winner will receive a discount coupon worth at least 50% off (max. value of $100) his or her next online textbook purchase. The retailer at which this coupon can be redeemed, and the percentage discount received will be determined by your individual responses in this study. Therefore, your true opinions are very important.

Click to continue

Appendix C: Sample Search Results Page – Access Condition (Study 1)

Academic Reads

Search Results

Here is the information you requested.

Book Title:	Advertising and Promotions
Author:	Bruce Wonnacott
Publisher:	John Wiley and Sons Publishing 1997
ISBN:	0-09-584463-0
Our Price:	$72.00

Our long term commitment to building strong customer relations means that we at *Academic Reads* strive to assist you in making the best possible choice to suit your individual needs. Therefore, we have conducted an extensive and up to date search of all major online retailers currently selling this textbook.

The lowest price currently available online for this textbook can be found at the following retailers:

Retailer:	**Price:**
Academic Reads	$72.00
Campus Connection	$72.00
Knowledge Central	$72.00
Varsity Learning	$72.00

Click to continue

Appendix D: Consent Form (Study 2)

Department of Marketing,
Faculty of Business
University of Alberta

Consent Form

I agree to participate in the study being conducted by researchers at the University of Alberta. I realize that I will receive a detailed explanation of the rationale and hypotheses for the study after the study has been completed.

I am aware that the study will take about 30 minutes.

I am aware that I may discontinue my participation in the study at any time without penalty.

I Agree To Participate

Appendix E: Description of Task (Study 2)

Please read the following information carefully. You will not be able to complete the study if you do not fully understand these instructions.

Recently, the University of Alberta had been considering purchasing a group membership for its students with an online membership club. These clubs offer members a wide variety of consumer products at substantial discounts over traditional retailers. Currently, the University is considering three competing vendors, but has decided to ask for student input before making the final decision on which club to purchase a membership from.

You are asked to **carefully** evaluate one of the online membership clubs being considered. The true identity of this merchandiser is being concealed for the purposes of this study. Therefore, the club you will be evaluating will be referred to as ***Access Club***. While this membership club can provide its members with extensive access to a wide product assortment, for the purposes of this study you will be assigned to only one product category. Therefore, access to product categories other than the one assigned via your password, as well as some of the site features, will be restricted.

Based on the password you have provided, you are asked to search the website for 8 ***jackets***. The brands and models you are to search for have been provided in the handout given to you by the experimenter. After you have completed your search for all ***jackets***, you will be asked to answer a series of questions pertaining to your overall evaluation of ***Access Club***, based on your search experience.

As an additional incentive for you to provide an accurate evaluation, a random draw will be held, where the winner will receive a discount coupon worth at least 50% off (max. value of $100) his or her next online purchase. The retailer at which this coupon can be redeemed, and the percentage discount received will be determined by your individual responses in this study. Therefore, your true opinions are very important. When you are ready to begin, click below to enter the ***Access Club*** digital storefront.

Click to continue

Appendix F: Sample Search Results Page – Access Condition (Study 2)

Publisher Price Information - Microsoft Internet Explorer

Access Club

Search Results

Columbia Sportswear Pagoda Peak Jacket

Size: Available in Men's and Women's sizes Small, Medium, Large, and Extra Large

Colour: Comes in Haze or Lilac

Description: All-round, weather-resistant, breathable jacket, with drawcord waist.

Our Price: $44.99

As part of our long-term commitment to customer service, we want to assist you in making the best possible choice to suit your individual needs. Therefore, we conducted an extensive and up-to-date search of all major online stores currently selling this product. Currently, the three lowest prices for this product can be found at the following retailers:

Store:	Price:
Access Club	$44.99
Easy Store	$44.99
Super E-tail	$47.49

Click to continue

Appendix G: Industry Price List (Study 2)

04/01/01 -- Price List -- Outerwear -- Jackets		
Access Club	**Price**	
Columbia Sportswear Pagoda Peak Jacket	$44.99	
Columbia Sportswear Transport Pullover	$50.99	
Columbia Sportswear Venturer Jacket	$55.99	
Helly Hansen Baker Shell	$64.99	
Helly Hansen Nelson Shell	$70.99	
Helly Hansen Sanford Shell	$64.99	
Patagonia Essenshell Jacket	$80.99	
Patagonia Trailblazer Jacket	$80.99	
Patagonia Zephur Pullover	$74.99	
Sierra Designs Backpacker's Rain Jacket	$54.99	
Sierra Designs Vapor Jacket	$60.99	
Sierra Designs White Rapids Pullover	$65.99	
Customer's Variety		
Columbia Sportswear Pagoda Peak Jacket	$54.99	
Columbia Sportswear Venturer Jacket	$64.99	
Helly Hansen Nelson Shell	$84.99	
Helly Hansen Sanford Shell	$74.99	
The North Face Avalanche Jacket	$89.99	
Patagonia Zephur Pullover	$89.99	
Sierra Designs Backpacker's Rain Jacket	$69.99	
Sierra Designs White Rapids Jacket	$69.99	
Easy Store		
Columbia Sportswear Euro Jacket	$55.99	
Columbia Sportswear Pagoda Peak Jacket	$44.99	
Columbia Sportswear Transport Pullover	$55.99	
Helly Hansen Nelson Shell	$73.49	
Helly Hansen Sanford Shell	$67.49	
Helly Hansen Thomson Shell	$64.99	
Patagonia Destiny Jacket	$80.99	
Patagonia Essenshell Jacket	$85.99	
Patagonia Zephur Pullover	$74.99	
Sierra Designs Backpacker's Rain Jacket	$57.49	
Sierra Designs Summit Pullover	$65.99	
Sierra Designs Vapor Jacket	$63.49	
		pg 1 of 2

Appendix G: (continued)

04/01/01 -- Price List -- Outerwear -- Jackets			
Everything Online			
Columbia Sportswear Pagoda Peak Jacket	$59.99		
Columbia Sportswear Transport Pullover	$59.99		
Helly Hansen Nelson Shell	$79.99		
Helly Hansen Thomson Shell	$79.99		
The North Face Mountaineer Shell	$74.99		
Patagonia Destiny Jacket	$94.99		
Patagonia Zephur Pullover	$84.99		
Sierra Designs Backpacker's Rain Jacket	$64.99		
Shopper's Paradise	**Price**		
Columbia Sportswear Pagoda Peak Jacket	$54.99		
Helly Hansen Sanford Shell	$74.99		
Helly Hansen Thompson Shell	$84.99		
Marmot Explorer Shell	$64.99		
Patagonia Essenshell Jacket	$89.99		
Patagonia Zephur Pullover	$89.99		
Sierra Designs Vapor Jacket	$69.99		
Sierra Designs White Rapids Jacket	$69.99		
Super E-tail			
Columbia Sportswear Pagoda Peak Jacket	$47.49		
Columbia Sportswear Solice Jacket	$55.99		
Columbia Sportswear Transport Pullover	$53.49		
Helly Hansen Nelson Shell	$75.99		
Helly Hansen Peterson Shell	$64.99		
Helly Hansen Sanford Shell	$64.99		
Patagonia Adventurer Jacket	$80.99		
Patagonia Essenshell Jacket	$83.49		
Patagonia Zephur Pullover	$77.49		
Sierra Designs Backpacker's Rain Jacket	$54.99		
Sierra Designs Vapor Jacket	$65.99		
Sierra Designs Western Pullover	$65.99		
Virtual Retaility			
Columbia Sportswear Euro Jacket	$59.99		
Columbia Sportswear Transport Pullover	$59.99		
Helly Hansen Nelson Shell	$79.99		
Marmot Explorer Shell	$79.99		
Patagonia Destiny Jacket	$94.99		
Patagonia Zephur Pullover	$84.99		
Sierra Designs Backpacker's Rain Jacket	$64.99		
Sierra Designs Vapor Jacket	$74.99		
			pg 2 of 2

Appendix H: Consent Form (Study 3)

Consent Form

To ensure confidentiality, raw data will be coded and stored on a password protected computer disk to which only the investigators named below will have access. Data will be retained for a period of five years post publication, after which it will be destroyed.

The University of Alberta creates and collects information for the purposes of research and other activities directly related to its educational and research programs. All participants in research projects are advised that the information they provide, and any other information gathered for research projects, will be protected and used in compliance with Alberta's Freedom of Information and Protection of Privacy Act.

If you decline to continue or you withdraw from the study, your data will be removed from the study upon your request. You may discontinue your participation in this study at any time without penalty by contacting the investigators listed below. Please be advised that this study will take about 30 minutes to complete. If you wish to proceed to the study, please click on the link below.

Valerie Trifts, Marketing PhD Student

Department of Marketing
University of Alberta School of Business
Edmonton, Alberta T6G 2R6
Canada
Voice: (780) 436-0646
E-mail: vtrifts@ualberta.ca

Gerald Häubl, Associate Professor in Marketing
Department of Marketing
University of Alberta School of Business
Edmonton, Alberta T6G 2R6
Canada
Voice: (780) 492-6886
E-mail: Gerald.Haeubl@ualberta.ca

I Agree To Participate

Appendix I: Description of Task (Study 3)

Please read the following information carefully. You will not be able to complete the study if you do not fully understand these instructions.

Recently, the University of Alberta has been considering purchasing a group membership for its students at an online travel agent. As members, students will be able to purchase a variety of travel services (such as flights, accommodations, vacation packages, or car rentals) at substantial savings. Two online travel agents are currently being considered, and you are asked to provide your input as to which travel agent should be selected. The true identities of the travel agents are being concealed for the purposes of this study. Therefore, the travel agents you are asked to evaluate will be identified as ***Fiesta Vacations*** and ***Holiday Tours***.

You are asked to ***carefully*** evaluate both travel agents being considered. Based on the password you have provided, you will be shopping for an **all-inclusive, 5 night vacation package for each of 4 destinations in Mexico**. For each destination, you will be provided information on special package deals offered by each travel agent. You must evaluate both travel agents and choose the one that you would most likely purchase each of the 4 travel packages from. You will also be asked to provide an overall evaluation of each travel agent, based on your entire shopping experience. While these travel agents offer vacation packages to a large number of destinations, your password will restrict you to a limited number of features for the purposes of this study.

As an added incentive for you to provide an accurate evaluation, a random draw will be held where **two** winners will each receive a discount coupon worth 50 % off (maximum value of **$500**) his or her next purchase from one of the two travel agents being considered. This coupon will be valid for 18 months from the time the winners are notified. The agent at which this coupon can be redeemed, and the percentage discount received, will be determined by your individual responses in this study. In other words, both your responses to each individual vacation package choice **and** your overall evaluation of each travel agent are important. When you are ready to begin, click below to continue.

Click to continue

Appendix J: Search Results Page – Low Ambiguity (Study 3)

Holiday Tours

Hacienda Beach Resort in Cancun

Your all inclusive package includes:

Description:
Round-trip air-fare and transfers
Trip Length:
5 night stay in a moderate hotel
Beach Location:
Located by the beach
Facilities:
restaurant, tennis, gift shop, and mini-mart
Price:
Package Price $849
(Per Person, based on double occupancy)

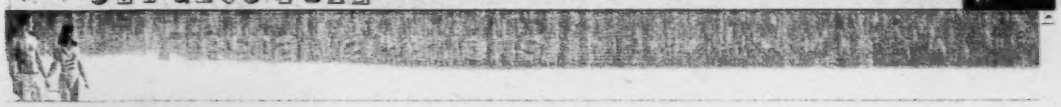
To help you choose the best vacation package for you, we have provided you with information about similar packages by our largest competitors. This information was obtained directly from their websites and represents the best alternatives currently available for your selected destination.

Travel Agent	Resort	Accommodation Ratings*	Accommodation Location	Facilities	5 night Package Price
Fiesta Vacations	Paradisus Beach Resort	moderate	by the beach	restaurant, tennis, gift shop, and mini-mart	$879
Sunshine Holidays	Riviera Hotel	moderate	by the beach	restaurant, tennis, gift shop, and mini-mart	$849
Tropical Travel	Castilla Beach Hotel	moderate	by the beach	restaurant, tennis, gift shop, and mini-mart	$879
Vacation Getaways	Sierra Resort	moderate	by the beach	restaurant, tennis, gift shop, and mini-mart	$879
Wave Adventures	Embarcadero Villa	moderate	by the beach	restaurant, tennis, gift shop, and mini-mart	$849

* Ratings are based on the following standardized scale (Economy, Standard, Moderate, Superior, and Deluxe).

Click to continue

Appendix K: Search Results Page – High Ambiguity (Study 3)



Tropicana Hotel in Cozumel

Your all-inclusive package includes:

- Round-trip air-fare and transfers
- 5 night stay in an intermediate hotel near the beach
- Facilities include recreation activities, bar, gift shop, and parking
- Package Price $949 (Per Person, based on double occupancy)

To help you choose the best vacation package for you, we have provided you with information about similar packages by our largest competitors. This information was obtained directly from their websites and represents the best alternatives currently available for your selected destination.

Travel Agent	Resort	Accommodation Ratings*	Accommodation Location	Facilities	5 night Package Price
Holiday Tours	Varadero Hotel	customary	close to the beach	water sports, lounge, mini-mart, and laundry	$919
Sunshine Holidays	Tequila Beach Hotel	moderate	a block from the beach	n/a	$919
Tropical Travel	Flores Resort	standard	by the beach	n/a	$919
Vacation Getaways	Costa Beach Resort	traditional	within walking distance of the beach	n/a	$949
Wave Adventures	Allegro Hotel	medium	a short walk to the beach	n/a	$949

* Ratings are provided by each individual travel agent.

n/a: The travel agent is not providing this information at its web site.

Click to continue

Appendix L: Consent Form (Study 4)

1. Title page

Title:	Vacations_02
Local Principal Investigator:	Valerie Trifts, Lecturer (B.B.A., M.B.A., PhD Candidate) Dalhousie University, School of Business 6152 Coburg Road Halifax, N. S. B3H 3J5 Phone: (902) 494-5109 E-mail: valerie.trifts@dal.ca
Degree Program:	PhD in Marketing University of Alberta School of Business
Supervisor:	Dr. Gerald Häubl Banister Professor of Electronic Commerce and Associate Professor of Marketing University of Alberta School of Business Phone: (780) 492-6886 E-mail: Gerald.Haeubl@ualberta.ca
Contact Person:	Valerie Trifts (see above contact information)

If you have any questions about this study that you are about to participate in, please feel free to contact Valerie Trifts for more information.

(1)

2. Introduction

We invite you to take part in a research study at Dalhousie University that is being conducted as part of a PhD thesis of the principal researcher, Valerie Trifts. Taking part in this study is voluntary and you may withdraw from this study without penalty at any time. The study is described below. This description tells you about what you will be asked to do, and any risks, inconvenience, or discomfort that you might experience. Participating in the study might not benefit you, but we might learn things that will benefit others. You should discuss any questions you have about this study with Valerie Trifts.

3. Purpose of the Study

The purpose of this study is to examine consumers' responses to a number of features currently being offered by online membership-based travel services. In this study, the researcher is interested in gathering information from students about their preferences for two of these online services that are specifically designed to appeal to the student consumer.

4. Study Design

This study consists of two phases. First, you will be asked to perform a shopping task, where you will be given four destinations to search for information about at two competing online travel services. Next, you will be asked a series of follow-up questions designed to measure your preference for each of these travel services.

5. Who can Participate in the Study

You may participate in this study if you have searched the Internet using Microsoft's Internet Explorer.

6. Who will be Conducting the Research

The principle investigator, Valerie Trifts, will be conducting all aspects of the research project.

7. What you will be asked to do

You will be asked to perform a series of shopping tasks at two online travel agents and form an overall evaluation of each of these agents. Prior to beginning your information search, you will be given a password that will allow you access to the two travel agent sites. Please be advised that because these are membership-based online services, the password you are given will only allow access to information used in this study. Once you have completed your search for information, you will return to the experimenter's website and be asked a series of follow up questions related to your shopping experience.

(2)

8. Possible risks and discomforts

Personal risks associated with this study are negligible. These could, potentially, include risks generally associated with computer usage (eye or muscle strain, for example) and/or frustrations associated with delays in accessing information via the Internet.

9. Possible benefits

For commerce students in particular, participation in this research can provide you with firsthand knowledge of how behavioral research is conducted in your own discipline.

10. Compensation/Reimbursement

For participating in this research, you will receive a 3% bonus credit in your Comm 2401 course. Furthermore, your name will be entered into a random draw, where if you are one of the two winners you will receive a 50% off (max value $500) discount coupon valid on your next travel purchase at whatever travel agent you choose during the study. Your odds of winning a prize are approximately 1 in 80.

11. Confidentiality

All of your responses will remain anonymous and confidential. Only myself, and my immediate supervisor Gerald Häubl, will have access to the data. Response data will be stored on disk, for a period of up to five years after publication of the research. Identifying information (i.e., your name and ID number) will be collected separately for the purposes of inclusion in the random draw and recording of class credit. Data will be aggregated and no individual responses will be used in the publication of the results.

12. New Information

As participants in this research, any new information that may affect your decision to participate in this study will be brought to your immediate attention.

13. Problems or Concerns

In the event that you have any difficulties with, or wish to voice concern about, any aspect of your participation in this study, you may contact Human Research Ethics/ Integrity Coordinator at Dalhousie University's Office of Human Research Ethics and Integrity for assistance: ph. (902) 494-1462, email: patricia.lindley@dal.ca

(3)

14. Signature

I have read the explanation about this study. I have been given the opportunity to discuss it and my questions have been answered to my satisfaction. I hereby consent to take part in this study. However, I realize that my participation is voluntary and that I am free to withdraw from the study at any time.

_____ _____

Participant's signature *date*

_____ _____

Researcher's signature *date*

(4)

Appendix M: Description of Task (Study 4)

Please read the following information carefully. You will not be able to complete the study if you do not fully understand these instructions.

The number of membership-based online travel services, designed specifically for university students, continues to rise. As members, students are able to purchase a variety of travel services (such as flights, accommodations, vacation packages, or car rentals) at substantial savings. In this study, we are interested in examining students' responses to the options currently being offered by such online travel services. Two membership-based travel agents are currently being studied, and you are asked to provide an overall evaluation of each of these two travel services.

You are asked to ***carefully*** evaluate both travel agents being studied. Based on the password you have provided, you will be shopping for **4 all-inclusive, 5 night vacation packages in Mexico.** For each destination, you will be provided information on special packages departing from Halifax over the spring break. You must evaluate both travel agents and choose the one that would most likely purchase each of the 4 travel packages from. You will also be asked to provide an overall evaluation of each travel agent, based on your shopping experience. Remember, your password will limit your access to information specific to this study, so that other features of the travel agents will not be accessible.

As an added incentive for you to provide an accurate evaluation, a random draw will be held where two winners will each receive a discount coupon worth a minimum of 50 % off (maximum value of **$500**) their next purchase from one of the two travel services being studied. The service at which this coupon can be redeemed, and the percentage discount received, will be determined by your individual responses in this study. In other words, both your responses to each individual vacation package choice **and** your overall evaluation of each travel agent are important. When you are ready to begin, click below to continue.

Click to continue

Appendix N: Consent Form (Study 5)

1. Title page

Title:	Vacations_03
Local Principal Investigator:	Valerie Trifts, Lecturer (B.B.A., M.B.A., PhD Candidate) Dalhousie University, School of Business 6152 Coburg Road Halifax, N. S. B3H 3J5 Phone: (902) 494-5109 E-mail: valerie.trifts@dal.ca
Degree Program:	PhD in Marketing University of Alberta School of Business
Supervisor:	Dr. Gerald Häubl Banister Professor of Electronic Commerce and Associate Professor of Marketing University of Alberta School of Business Phone: (780) 492-6886 E-mail: Gerald.Haeubl@ualberta.ca
Contact Person:	Valerie Trifts (see above contact information)

If you have any questions about this study that you are about to participate in, please feel free to contact Valerie Trifts for more information.

(1)

2. Introduction

We invite you to take part in a research study at Dalhousie University and the University of Alberta that is being conducted as part of a PhD thesis of the principal researcher, Valerie Trifts. Taking part in this study is voluntary and you may withdraw from this study without penalty at any time. The study is described below. This description tells you about what you will be asked to do, and any risks, inconvenience, or discomfort that you might experience. Participating in the study might not benefit you, but we might learn things that will benefit others. You should discuss any questions you have about this study with Valerie Trifts.

3. Purpose of the Study

The purpose of this study is to examine consumers' responses to a number of features currently being offered by online membership-based travel services. In this study, the researcher is interested in gathering information from students about their preferences for one of these online services that are specifically designed to appeal to the student consumer.

4. Study Design

In this study, you will be asked to perform a shopping task, where you will be given four destinations to search for information about at one online travel services. You will also be able to access information directly from its main competitors' web pages through the experimenter's web site. After you've completed your information search, you will be asked a series of follow-up questions designed to measure your preference for the travel service you are evaluating.

5. Who can Participate in the Study

You may participate in this study if you have searched the Internet using Microsoft's Internet Explorer.

6. Who will be Conducting the Research

The principle investigator, Valerie Trifts, will be conducting all aspects of the research project.

7. What you will be asked to do

You will be asked to perform a series of shopping tasks at an online travel agent and form an overall evaluation of this agent. Prior to beginning your information search, you will be given a password that will allow you access to the travel agent site. Please be advised that because this is a membership-based online service, the password you are given will only allow access to information used in this study. Once you have completed your search for information at both the travel agent you are evaluating and any competitor web sites you wish to view, you will return to the experimenter's website and be asked a series of follow up questions related to your shopping experience.

8. Possible risks and discomforts

Personal risks associated with this study are negligible. These could, potentially, include risks generally associated with computer usage (eye or muscle strain, for example) and/or frustrations associated with delays in accessing information via the Internet.

9. Possible benefits

For commerce students in particular, participation in this research can provide you with firsthand knowledge of how behavioral research is conducted in your own discipline.

10. Compensation/Reimbursement

For participating in this research, you will receive a 3% bonus credit in your Comm/Mgmt 2401 or Comm 1000 course. Furthermore, your name will be entered into a random draw, where if you are one of the winners you will receive a 50% off (max value $500) discount coupon valid on your next travel purchase at whatever travel agent you choose during the study. Your odds of winning this prize are approximately 1 in 80.

11. Confidentiality

All of your responses will remain anonymous and confidential. Only myself, and my immediate supervisor Gerald Häubl, will have access to the data. Response data will be stored on disk, for a period of up to five years after publication of the research. Identifying information (i.e., your name and ID number) will be collected separately for the purposes of inclusion in the random draw and recording of class credit. Data will be aggregated and no individual responses will be used in the publication of the results.

12. New Information

As participants in this research, any new information that may affect your decision to participate in this study will be brought to your immediate attention.

13. Problems or Concerns

In the event that you have any difficulties with, or wish to voice concern about, any aspect of your participation in this study, you may contact Human Research Ethics/ Integrity Coordinator at Dalhousie University's Office of Human Research Ethics and Integrity for assistance: ph. (902) 494-1462, email: patricia.lindley@dal.ca

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14. Signature

I have read the explanation about this study. I have been given the opportunity to discuss it and my questions have been answered to my satisfaction. I hereby consent to take part in this study. However, I realize that my participation is voluntary and that I am free to withdraw from the study at any time.

_____ _____

Participant's signature *date*

_____ _____

Researcher's signature *date*

(4)

Appendix O: Description of Task (Study 5)

Please read the following information carefully. You will not be able to complete the study if you do not fully understand these instructions.

The number of membership-based online travel services, designed specifically for university students, continues to rise. As members, students are able to purchase a variety of travel services (such as flights, accommodations, vacation packages, or car rentals) at substantial savings. In this study, we are interested in examining students' responses to the options currently being offered by such online travel services. Three membership-based travel agents are currently being studied, and you are asked to provide an overall evaluation of one of these travel services.

Based on the password you have provided, you will be shopping for **2 all-inclusive, 5-night vacation packages in Mexico** at a travel company called ***Fiesta Vacations***. For each destination, you will be asked to shop for special packages departing from Halifax over spring break. The exact destinations you will be searching for will be provided on the experimenter's web page. To help you with your evaluation of ***Fiesta Vacations***, the experimenter will provide you access to five other main online travel services for comparison. Once your search is completed, you will be asked a series of questions pertaining to your overall evaluation of ***Fiesta Vacations***, based on your search experience. Remember, your password will limit your access to information specific to this study, so that other features of the travel agent (including photos of the resorts) will not be accessible.

As an added incentive for you to provide an accurate evaluation, a random draw will be held where two winners will each receive a discount coupon worth a minimum of 50% off (maximum value of **$500**) his or her next purchase from one of the travel services being studied. The service at which this coupon can be redeemed, and the percentage discount received, will be determined by your individual responses in this study. In other words, both your responses to each individual vacation package choice **and** your overall evaluation of each travel service are important. When you are ready to begin, click below to continue.

Click to continue